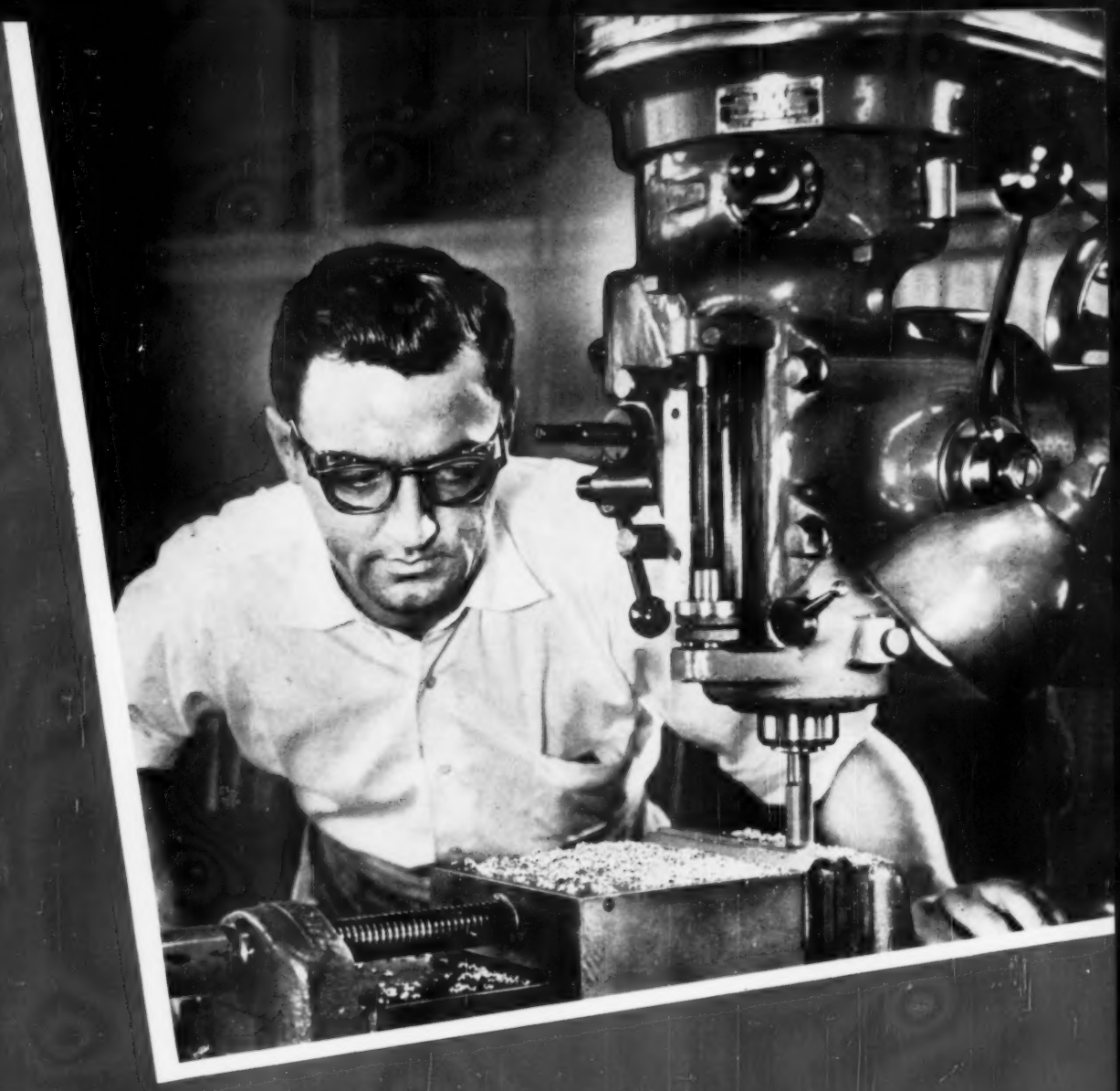

Safety Maintenance

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • FEBRUARY, 1958 • 50¢

Published By Alfred M. Best Company, Inc.

Eye Protection

482A
VINYLITE GOGGLE

Larger face mask — greater protected area

Deeper cup — increased lateral protection — easily fits over all safety glasses and personal glasses.

Modified nosepiece — aids comfort, facial fit.

It's AO's New "482A"!

(Vinylite Mask Goggle)

Once again American Optical engineering and research make a good product even better! This light, comfortable flexible mask goggle offers the trustworthy, *optically correct* protection which has made it so popular PLUS the new features above. It's a better buy than ever! Recommended for protection against flying particles striking from any direction in babbitting, chipping, cutting rivets, light grinding, on hand or machine tool work, or where spark-explosion hazards endanger. Your nearest AO Safety Products Representative can supply you.

Quick Facts

Lens — Interchangeable, one-piece acetate, easily removed and replaced. Curved slightly for increased field of vision. Provides greatest worker comfort, safety, efficiency.

Frame — Soft, face-hugging vinylite provides maximum flexibility and full protection.

Headband — Elastic, easily adjustable.

Colors — Clear frame, clear or green lens. For green frame, clear or green lens specify Catalog No. 483A.

Always insist on the AO Trademark on Lenses and Frames

American Optical
COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS
Branches in Principal Cities

(For details, use Key # N-1 on card on page 1)

BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE. To obtain copies write in the key numbers on the free-postage card below.

INDUSTRIAL HYGIENE

Air Pollution Control 486
Oxy-Catalyst, Inc. Illustrated bulletin shows how catalytic oxidation systems are used for industrial air pollution control and heat recovery. Features four problem-solution case histories of typical installations and a new packaged unit for easy installation.

Air Conditioners 487
American Blower Co. New 16-page catalog describes a line of inductor air conditioners for perimeter air conditioning of multi-story buildings. Gives features of the units, selection hints, installation and testing instructions.

Audiometric Rooms 488
Koppers Co., Inc. Illustrated bulletin describes noise-free rooms suitable for testing the hearing of employees. Includes specification data on various sizes of these portable rooms.

WARNING DEVICES

Phosphorescent Tape 489
M-M-A, Inc. Bulletin describes a tape that glows in the dark and can be used to outline stairs, aisles and hazardous areas. Folder explains that ten minute exposure to light will make the tape glow for eight hours.

Glow-Paint Markings for Planes . 490
Switzer Brother, Inc. Interesting and well illustrated brochure shows how the use of daylight fluorescent paints to mark airplanes increases the visibility of planes to provide a new margin of safety in the increasingly crowded airways.

Beacon Light 491
The Pyle-National Co. New, flashing beacon light that rotates 360 degrees is described in this color bulletin. Illustrates size, weight, operating voltages and colors available. Light plugs into cigarette lighter and can be used for call signal and warning light by trucking companies, highway and public service departments and emergency crews.

Portable Flashing Emergency Signs 492
Tedcar Products Co. Bulletin illustrates many uses for this flashing warning sign. Gives details of adaptability of design and table of construction features, which make it invaluable for such uses as emergency repair of disabled vehicles on highway and oil and fire hose warning.

PERSONNEL PROTECTION

Neo-Nylon Protective Clothing .. 493
Robin W. Adair Co., Inc. Illustrated bulletin shows variety of welding safety clothing, welding curtains, etc., made from tear-resistant neo-nylon fabric. Garments can also be used for protection in breweries, lumber yards and foundries, come in many sizes and are light in weight.

Winter Liners for Hard Hats 494
Mine Safety Appliances Co. Well-illustrated, 4-page folder describes new assortment of winter liners for hard hats. Features liner with no metal parts and with extra provision for extra insulation over head, neck and ears, for use in operations involving possible exposure to electrical shock. Zipper and tab type liners are also shown.

Industrial Work Gloves 495
Hood Rubber Co. Variety of neoprene and plastic coated gloves for men and women are pictured in this pocket-size folder. Gloves are in many weights and cuff lengths. Also includes comprehensive performance chart comparing wearing and chemical-resistant properties of different types.

Chemical-Resistant Clothing 496
Jomac, Inc. Three new bulletins describe new line of polyvinyl chloride-impregnated garments, gloves and aprons, for industries such as chemical, petroleum, drug and food-processing. Line drawings detail safety and construction features and charts are included giving sizes and styles available.

Acid-Resistant Work Clothes ... 497
Worklon, Inc. 1958 edition of catalog introduces new group of synthetic fiber work clothes in two colors, blue and grey. Includes lab report on resistance of fabrics to acids, caustics and other chemicals. Line features shirts, pants, coveralls and lab coats in Orlon, Dynel, lint-free Orlon and wash-and-wear blends.

Chemical-Resistant Clothing 498
Millburn Co. Six-page booklet offers comparison of chemical-resistant and safety factors in synthetic fabrics and films available in this clothing. Resistance to different chemicals at varying concentrations and temperatures, and fire and water repellancy is documented in tables based on test data from synthetic fiber manufacturers.

Neoprene-Coated Cotton Gloves . 499
M. L. Snyder & Son Co. Bulletin describes properties of inexpensive but tough work gloves. Lists special adaptabilities to industries such as commercial fishing and meat, construction, oil refineries and general farm work. Flexibility and bright red color are features of these gloves.

MAINTENANCE

Adhesives, Sealants, Paints & Coatings 500
Magic Chemical Co. New catalog lists adhesives, sealants, paints and coatings according to Government specifications. Useful to Purchasing and Procurement Officials of companies handling Government contracts or needing products conforming to Government specifications. Lists Government specification number and by title, covering a very broad field.

(Continued on the next page)

MAIL POSTAGE PAID CARD FOR MORE DATA

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.
NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.
FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.
KEEPING UP WITH RECENT DEVELOPMENTS: Insert the key numbers shown on items in special feature article.

PLEASE PRINT YOUR NAME & ADDRESS

Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

February, 1958 **Please send me the following free data**

Free Bulletins (Cont'd)

Floor Treatments 501

Hillyard Chemical Co. Fall issue of floor treatments booklet. Well illustrated 16-pages of articles on training maintenance staff, chart on floor maintenance cost cutting, floor cleaning methods. Details on equipment and where and how it can best be used. Of great interest to Maintenance Engineers.

Silicone Products 502

Dow Corning Corp. New reference guide describes over 150 silicone products, many introduced within the past year. Contains detailed charts, tables, graphs and data on properties and performance as well as illustrated examples of how silicone can cut costs, simplify design, and add new sales appeal. 16-pages heavily illustrated and cross-indexed for easy reference.

Industrial Carts and Lift-Tables 503

Lesco Eng. & Mfg. Corp. Five new bulletins, well illustrated and documented, describe series of hydraulic lift-tables, die-handlers, service carts, etc. Included are dimensions, weights, capacities and prices, also line drawings showing details of construction. Lift-tables used for lifting heavy dies and castings, machine accessories, and as adjustable work benches, welders' positioning tables, leveling table for presses, etc.

MATERIALS HANDLING

Fork Truck Tips 504

Lewis-Shepard Products Inc. Informative 8-page brochure gives tips on operating fork trucks more safely. Fully illustrated with series of cartoon-type drawings depicting various operations of fork trucks, as well as instruction outlines, tables on stacking, turning radii, etc., and a list of "do's and don'ts" for operators.

Electric Lift Trucks 505

Automatic Transportation Co. Three new 4-page brochures illustrated with scale drawings and cutaways showing details of special features. Line spotlights latest walkie-talkie transporter and stacker. Brochures are in color and each deals with different rated lifting capacity, including 2,000, 2,500, and 3,000 lbs., and lift heights up to 135 inches.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Reader's Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Facilities
124	Salt Tablets
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Throat Medication
131	Eye Wash Fountains
132	Hand Drying Facilities
133	Disinfectant—Deodorants
134	Hearing Testers
135	Hearing Protectors
136	Noise Analysis
137	Emergency Rescue Kits
	FIRE PROTECTION
141	Safety Cans
142	Fire Alarms
143	Safer Solvents
144	Degreasing Machines
146	Fire Blankets
148	Watchmen's Control Systems
149	Extinguishing Ash Trays
	LIGHTING EQUIPMENT
150	Alarms & Warning Lights
153	Fluorescent Lamp Guards
154	Emergency Lights
	MAINTENANCE
160	Anti-Slip Floor & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Floor Cleaning Machines
165	Paints
166	Industrial Wipers
	LADDERS & HANDLING
170	Ladders
171	Ladder Safety Devices
172	Scaffolds
173	Work Platforms
174	Sling & Rope Tester
175	Safety Hooks
177	Plastic Acid-Containers
	GUARDS
178	Machine Guards
179	Power Press Feeders
180	Safety Tools
181	Vacuum Sheet Lifters
182	Valve Operators
	EDUCATIONAL AIDS
191	Safety Signs
192	Safety Awards & Emblems
193	Employee Safety Guide
194	Bulletin Boards

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"SAFETY MAINTENANCE & PRODUCTION"

ALFRED M. BEST COMPANY, INC.

75 FULTON STREET

NEW YORK 38, N. Y.

Service Dept.

READER'S FREE INQUIRY CARD

for further data on ADVERTISED PRODUCTS, NEW PRODUCTS, FREE BULLETINS & CATALOGS

WHAT'S YOUR PROBLEM?

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13 Stanhope Street
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Safety Maintenance

formerly "SAFETY ENGINEERING"

Volume 115, Number 2 **February, 1958**

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Cover picture by courtesy of American Optical Co.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

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it's SAFE to say

● SCRATCH THE SURFACE

UNDER this title, more than fifteen years ago, SAFETY MAINTENANCE published a full page poster, showing a plant nurse applying a bandage to the finger of an industrial employee. During the intervening years, we have received many requests for reprints of the poster for use on plant bulletin boards.

In that poster we emphasized that dirt and neglect often lead to infection and that proper cleansing and prompt treatment of all minor wounds or skin breaks can prevent pain and costly disability.

Some years ago, a California operation employing about 1,500 workers undertook to train all operating personnel in first aid. Although the company's accident experience had not been abnormal, top management—spurred on by those responsible for safety—were persuaded that benefits would be derived from such a company-wide training course. But they were not prepared for actual results.

Following completion of the training, the company experienced a 50 percent reduction in cases of accidental infection, a 98.5 percent reduction in the number of days lost because of infection, a 95.2 percent drop in medical costs due to infection and a gross saving of $73,740 (what a lot of bandage and antiseptic THAT would buy!)

With most of us—in or out of industry—it is almost second nature to disregard minor scratches, cuts or tiny breaks in the skin, all of which are important sources of later infection. Either we do not fully realize the potential dangers or become too lazy to do anything about the minor wound until it ceases to be minor. Too many industrial workers fear possible ridicule for fussing over what appears to be a minor matter.

In the early days of the safety movement, courting possible infection almost became a badge of brawn. In this age of antiseptics, antibiotics and inconspicuous, flesh-toned bandages, neglect of minor wounds is just plain stupidity not in keeping with the higher intelligence levels found in all lines of industry.

Reports covering a number of industrial states indicated that an average of one in twelve compensated cases involved infection. If we lower that figure to one in twenty, in recognition of wider public knowledge of infection prevention, we arrive at the only possible conclusion that infection unfortunately still plays a vital part in the story of time lost. Conversely, full recognition of the danger potentials of infection and a consistent drive to educate new workers as well as the old-timers will pay off in great economic savings, shared by both employer and employee.

Infection can kill; it certainly can maim permanently and prevention is still better than reliance on the antibiotics. Infection can come from industrial skin irritants as well as accidental cuts. Cleanliness and prompt treatment are doing much to control the incidence and severity of dermatitis, by far the greatest cause of all industrial diseases.

When does Sound Become Noise?

Photo Courtesy Lockheed Aircraft Corporation

Unless you can calibrate your ear, the only positive way to answer this question is by accurate measurement with instruments. Subjective results are often misleading and provide only partial answers. For accurate and complete results, industries specify General Radio sound-measuring equipment. This fully-integrated line features instruments for sound-level measurements of either high-, medium-, or low-level sounds; sound analyzers for either narrow- or wide-band analysis; impact-noise analyzers; vibration meters and analyzers; and a complete line of accessories to further extend system versatility. Write for "The Sound Bulletin" and get the complete story on sound measurement.

Evaluating Noise by Octave-Band Methods preliminary to soundproofing a hydraulic-pressure generating system at Lockheed's test laboratory. The spectral distribution of noise determined with the G-R Octave-Band Analyzer defines the problem and aids in the prescription of proper soundproofing treatment (Sound-Level Meter serves as preamplifier for Analyzer).

Type 1551-A Sound-Level Meter, **$385**

Type 1555-A Sound-Survey Meter, **$150**

Type 1556-A Impact-Noise Analyzer, **$210**

Type 1550-A Octave-Band Analyzer, **$535**

Type 762-B Vibration Analyzer, **$585**

Type 761-A Vibration Meter, **$510**

Type 760-B Sound Analyzer, **$520**

All G-R Products are now covered by a *2-Year Warranty*

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Mass., U.S.A.

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In **CANADA:** 99 Floral Parkway, **TORONTO 15**

(For details, use Key # N-2 on card on page 1)

A break
for men who wear hoods!

New Bullard abrasive blasting helmets and lead discing helmets are extra lightweight. Wear them for hours without fatigue. Protection from overhead hazards is afforded by a "HARD BOILED" aluminum hat used as a headpiece.

Wearer has clear, wide angle visibility through large hinged plastic face piece. To diminish abrasive pitting, perforated metal screen slides over face piece.

Cape is lightweight, double coated plastic with dust-proof self adjusting inner neckband.

USE CLEAN MOISTURE-FREE AIR

Wherever compressed air is used in helmets, tools or painting, a Bullard purifier hooked into the system dries and cleans air from compressor — protecting men and materials.

Write for catalog and specifications of Bullard protective hoods and air purifying equipment.

E. D. BULLARD COMPANY, Sausalito, California

BULLARD
INDUSTRIAL SAFETY EQUIPMENT

(Use Key # N-3 on Inquiry Card on page 1)

the future shows

San Francisco, Calif. *February 6–7*

Eighth Annual California Statewide Meeting of the Governor's Industrial Safety Conference (Fairmont Hotel). A. C. Blackman, Chief, Division of Industrial Safety, Calif. Dept. of Industrial Relations, 965 Mission St., San Francisco 3, Calif.

Memphis, Tenn. *March 2–4*

Southern Safety Conference & Exposition (Peabody Hotel). W. L. Groth, Executive Director, P.O. Box 8927, Richmond 25, Va.

Philadelphia, Pa. *March 5–6*

Twenty-fourth Annual Regional Safety & Fire Conference and Exhibit (Bellevue-Stratford Hotel). Harry H. Verdier, Executive Director, Safety Council, Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philadelphia 7, Pa.

Boston, Mass. *March 17–18*

Thirty-Seventh Annual Massachusetts Safety Conference and Exhibit (Hotel Statler). Bruce Campbell, Manager, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

Los Angeles, Calif. *March 17–19*

Fifth Annual Western Safety Congress & Exhibits (Ambassador Hotel). Joseph M. Kaplan, Manager, Greater Los Angeles Safety Council, 3388 W. 8th St., Los Angeles 5, Calif.

Ft. Wayne, Ind. *March 18–19*

Northeastern Indiana Safety Conference and Exhibit. Ivan A. Martin, Manager, Safety Council, Chamber of Commerce of Fort Wayne, Ft. Wayne 2, Ind.

Gainesville, Fla. *April 9–11*

Fifth Annual Conference on Accident Prevention Engineering (University of Florida). W. R. D. Nickelson, Conference Coordinator, Engineering & Industrial Experiment Station, Univ. of Florida, Gainesville, Fla.

New York, N. Y. *April 14–18*

Twenty-Eighth Annual Greater New York Safety Convention and Exposition (Statler Hotel). Greater New York Safety Council, 60 East 42nd St., New York 17, N. Y.

Detroit, Mich. *April 15–17*

Twenty-Eighth Annual Michigan Safety Conference (Sheraton Cadillac Hotel). Ben Duguid, Executive Secretary, 16130 Northland Dr., Detroit 35, Mich.

St. Louis, Mo. *April 15–17*

Annual American Welding Society Show, (Hotel Statler). Robert T. Kenworthy, Exposition Management, 12 E. 41st St., New York 17, N. Y.

Columbus, Ohio *April 22–24*

Twenty-eighth Annual All-Ohio Safety Congress & Exhibit (Deshler-Hilton Hotel). Arthur W. Moon, Congress Manager, Room 611, Ohio Depts. Bldg., Columbus 15, Ohio.

Norfolk, Va. *May 1–3*

Virginia Safety Association Conference (Monticello Hotel).

Richmond, Va. *May 5–7*

Virginia Safety Association Conference (John Marshall Hotel).

Allentown, Bethlehem, Easton, Pa. *May 5–7*

Thirty-first Annual Eastern Pennsylvania Safety Conference. Harold A. Seward, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Buffalo, N. Y. *May 6–8*

Eighteenth Annual Western New York Safety Conference & Exhibit (Hotel Statler). Clifford H. Seymour, Executive Secretary, Western N. Y. Safety Conference, P.O. Box 315, Niagara Falls, N. Y.

Asheville, N. C. *May 14–16*

Twenty-Eighth Annual North Carolina Statewide Industrial Safety Conference (Battery Park Hotel). H. S. Baucom, Director of Safety, N. C. Industrial Commission, Raleigh, N. C.

Roanoke, Va. *May 18–20*

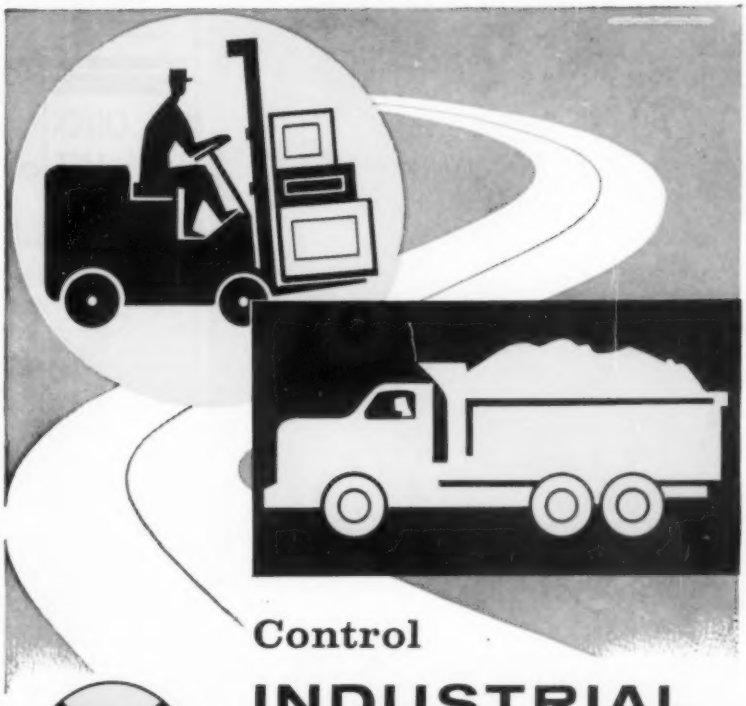
Virginia Safety Association Conference (Roankoe Hotel).

Cleveland, Ohio *June 9–12*

Eighth National Materials Handling Exposition (Public Auditorium). Clapp & Poliak, Exposition Management, 341 Madison Ave., New York 17, N. Y.

Rockland, Me. *September 18–19*

Thirty-First Annual Maine State Safety Conference (Samoset Hotel). Arthur F. Minchin, Secretary, Dept. of Labor & Industry, State House, Augusta, Me.



Control
INDUSTRIAL
TRAFFIC with
Stonehouse Signs!

Today's vast manufacturing plants have spawned a new and growing hazard, vehicle, pedestrian and rail traffic in and around plant grounds and buildings. Too often, this traffic "just grows". . . is left to shift for itself, without control.

In your plant, play it safe with industrial traffic signs, made for industry by STONEHOUSE. All signs are made of enduring, tested materials, and designed in accordance with American Standard specifications.

Remember . . . nothing costs so little, yet pays off so handsomely, as accident prevention!

* *Write today for our free, full-color, 64 page catalog of thousands of ready-to-ship safety signs, plus information about custom-printed signs to meet your special needs.*

"Signs since 1863"

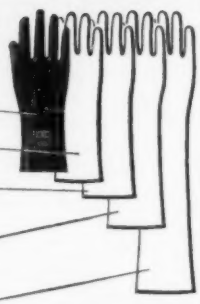
Stonehouse SIGNS

STONEHOUSE SIGNS, INC., Stonehouse Building, 9th and Larimer, Denver 4, Colorado
(For details, use Key # N-4 on card on page 1)

These Stanzoil® Milled Neoprene Gloves
Guarantee Positive Liquidproof Protection in 103 Basic Oils, Acids, Caustics, Greases, Solvents

Black All Neoprene Stanzoils With Non-slip Grip

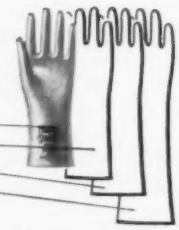
Model	Weight	Fingers	Length
N-31	Light	Straight	10½"
N-35	Light	Curved	10½"
N-32	Medium	Straight	11"
N-36	Medium	Curved	11"
N-41	Heavy	Straight	12"
N-44	Heavy	Curved	12"
N-51	Heavy	Straight	14"
N-33	Light	Straight	14"
N-54	Heavy	Curved	14"
N-71	Heavy	Straight	18"
N-73	Light	Straight	18"
N-74	Heavy	Curved	18"



White All Neoprene Stanzoils With Smooth Finish

Model	Weight	Fingers	Length
N-30	Light	Curved*	10½"
NW-31	Light	Straight	10½"
NW-32	Medium	Straight	11"
NW-41	Heavy	Straight	12"
NW-51	Heavy	Straight	14"

*Non-slip



FREE Hand Protection Analysis . . . Send a description of your job requirements (length, dexterity, wear resistance, chemicals used, importance of safe grip, hot or cold temperature extremes, fatigue factor and sizes) to our "Hand Protection Clinic." New catalog and price list available on request.

the PIONEER Rubber Company
244 Tiffin Road, Willard, Ohio

(For details, use Key # N-5 on card on page 1)

CHECK LIST of aids to production

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A welder caused us to caucus

The note from an employee suggestion box read "How come a company like this hasn't got the U. S. Savings Bond Payroll Savings Plan". It was signed by a welder in the fabricating department.

Since we actually *do* have Payroll Savings this told us two things: (1) Probably more employees than we imagined wanted the advantage of buying U. S. Bonds automatically through Payroll Savings. (2) We had grown lax in bringing our Plan to their attention.

But what to do? The solution was simplicity itself.

We called in our State Savings Bonds Director. He provided all the promotional materials needed to arouse interest in U. S. Savings Bonds. Then he helped to conduct a personal canvass and place an application blank in everyone's hands.

The results were amazing. Employee participation shot up to a percentage that we could take pride in. There was no "hard selling", nor was work interrupted. Our people wanted the security U. S. Savings Bonds offer them.

Today there are more Payroll savers than ever before in peacetime. Your State Director will be happy to help you install a Payroll Savings Plan or build enrollment in one already existing. Look him up in the phone book or write: Savings Bonds Division, U. S. Treasury Dept., Washington, D. C.

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(For details, use Key # N-25 on card on page 1)

How Do Dormant Hazards Wake Up?

by **A. W. MEINKE**
Assistant Secretary
Indemnity Insurance Co.
of North America
Philadelphia, Pa.

Watch out for "sleeper" hazards. Many potential accidents aren't laid to rest . . . they're just lying down.

Often potential causes of accidents exist for long periods of time without resulting in injury or damage. Then suddenly such an exposure may fly into action and cause a serious accident. **Sleeper** or **dormant hazards** are misleading because they frequently appear to be remote or of very minor consequence. The profit-conscious executive knows that it costs money to have accidents, and it also costs money to prevent them. As a result, corrective measures to remove potential accident exposures—particularly sleepers—are often rejected by management because the expense seems excessive in comparison with the probable savings in accident dollars. Then, after the serious accident has occurred, management must bear **both the accident loss and the cost of eliminating the hazard.**

An examination of the sequence leading to injury or damage explains why accident hazards often appear to be dormant. Safety engineers generally agree that the sequence leading to an injury is:

(1) the accident cause,
(2) the accident,
(3) the injury or damage.

The accident is the cause of the injury; the unsafe act or condition is the cause of the accident. Actually, however, this sequence is incomplete. Two other factors should be inserted as follows:

1. The accident cause (unsafe act or condition).
2. Circumstances activating the cause.
3. The accident.
4. Circumstances controlling the nature or extent of injury or damage.
5. The injury or damage.

Consider, for example, an ax with a loose head. A loose head on an ax is an unsafe condition and is thus a potential cause of an accident. There are, however, varying degrees of looseness. When the looseness does not appear to be sufficient to permit the blade to fly off when the ax is used, the hazard is regarded as remote and of little consequence. Nothing is likely to be done to repair the ax, and it may remain in that condition for a long time before it causes an accident. During the interim, it is a sleeping or dormant hazard.

Now what about the circumstances that awaken or activate a dormant exposure? This is item 2 in the accident sequence. One circumstance is the use of the ax. Even with a very loose head, an ax does not present a serious accident exposure so long as it remains unused.

Other circumstances are the shrinking, swelling, or compression of the ax handle. Just as floor boards in the home shrink and swell with changes in atmospheric humidity, so the ax handle, including the part inserted in the eye of the blade, may shrink and swell under atmospheric changes. In dry weather the ax head may become looser, in wet weather tighter. The head may also be loosened by compression of the wood in the eye. The wood may be compressed by the force of ax blows, or in prying on the handle to loosen the ax from the object being cut. Thus continued use may gradually increase the looseness.

The speed of the swing is still another circumstance that may activate the accident cause. The speed of the swing may be increased by physical characteristics of the person using the ax. Dullness of the blade or toughness of

the wood may require a harder swing. The greater the speed, the greater the centrifugal force tending to pull the blade from the handle.

Thus circumstances that activate the cause in the above case may be the use of the defective ax, atmospheric humidity, compression of the part of the handle inserted in the eye, the physical characteristics of the ax user, the dullness of the blade, the toughness of the wood being cut, etc. Some of these circumstances, like shrinking and swelling of wood with atmospheric changes, vary from day to day. They undulate back and forth in a sort of wave action. Sometimes the changing circumstances may neutralize each other; at other times they may act in harmony to increase the hazard. When the right combination of circumstances appears, the dormant cause springs into action and the accident occurs. It is similar to the principle of a slot machine; when three gums appear, the jackpot is released.

What is an Accident

An accident can usually be regarded as motion—a force out of control—a fall, a slip, a falling or flying object, and the like. Even in electrical shock or burns, there is an unwanted movement of electrons or heat waves. In the example of the defective ax, the accident is the released blade flying through the air with momentum out of control. It has the power to cause injury or damage, but the final outcome depends upon another set of circumstances—those controlling the nature and extent of the injury or damage.

Is it Serious?

Circumstances which might control the nature and extent of injury or damage are, for example, the angle at which the blade is hurled, the presence or absence of persons or objects in the path of the flying missile, the force with which the blade strikes, and so on. The blade could strike a resistant object without damage, or could lose its momentum and fall harmlessly to the floor or ground. That would be a no-injury accident. It could hit a person on the rebound after losing most of its force, strike with a flat or blunt surface foremost, and make contact with a part of the body well protected by clothing or a thick pad of flesh. Under such circumstances, it might be a minor-injury accident. It could hit a person directly with great force, with a sharp edge foremost, and in a particularly vulnerable part of the body. Under such circumstances it could be a major-injury accident. Thus it is obvious that the same cause, on different occasions and under different sets of circumstances, can produce accidents varying widely in extent of injury or damage.

Underlying Principle

Numerous other examples could be cited to enlarge upon the functions of the two sets of circumstances illustrated above, but that should be unnecessary. Although the activating and limiting circumstances will vary widely in different accidents, the principle in each case is the same.

In conclusion, it should be noted that the accident which eventually results from a dormant cause can be either major or minor, depending on the set of circumstances existing at the time. Thus, since no one can predict when the dormant cause will be activated, or what the severity will be, it is important to eliminate them promptly when first discovered.

Work Injury Rates Stable in 1956

American workers were injured on the job in 1956 at rates that held close to or fell below the record low levels of recent years, the U. S. Labor Department's Bureau of Labor Statistics reported in releasing final 1956 figures.

Employees in manufacturing suffered 12.0 disabling injuries for each million man-hours worked, about the same as in the preceding 2 years. Contract construction showed a 10-percent improvement as injuries dropped sharply from 34.5 per million man-hours in 1955 to 31.2, the lowest level reached since 1945. The average rate for wholesale and retail trade remained virtually unchanged at 12.5. None of the other major nonmanufacturing groups showed significant changes from 1955.

Low Rates

In manufacturing, outstandingly low rates were achieved by these groups: Synthetic rubber, 1.9; synthetic fibers, 2.3; miscellaneous communication equipment, 2.4; explosives, 2.5; aircraft, 2.6; radio tubes, 2.7; tires and inner tubes, 3.3; electric lamps (bulbs), 3.3; and electrical equipment for vehicles, 3.4.

The lowest rate recorded for any industry was that for telephone communication, 0.8. Other low rates among nonmanufacturing industries were: Banks and other financial agencies, 2.5; insurance, 2.5; and retail apparel and accessories, 3.9.

Severity Rates

Disabling work injuries in manufacturing resulted in a total of 712 days of disability for each million man-hours worked during the year, compared with 763 days in 1955, according to the BLS revised figures. Death resulted from 3 in every 1,000 cases reported, and some permanent impairment, such as loss of limb, resulted from 63 in every 1,000. Cases of temporary injury, that kept the worker off his job for at least a day, averaged 18 days of disability per case. The average for all cases, including time-charges evaluations for permanent impairments and deaths, amounted to 59 days per case, compared with 63 in 1955.

In construction, disability due to work injuries averaged 85 days per case and totaled 2,330 days for each million man-hours worked. Injuries in wholesale and retail trade averaged 43 days per case, and the standard severity rate was 498 days per million man-hours.

THE HIGH COST of Accidents

— A Case History

In the December 1957 issue of this publication, a figure of over $1 hundred was quoted as the total direct and indirect costs of a bruised hand in the review of a speech given by Thomas J. Cleland, Director of Industrial Relations and Safety of the Fibre Box Association at that organization's annual meeting. Because of the many requests from readers for further details about the costs of this minor accident, the complete break-down of the total into its component elements is presented herewith.

It should be noted that this case history is not a theoretical one, but is an actual incident taken from the accident questionnaire files of Carl Simpson, Safety Director of the Folding Paper Box Association.

ACCIDENT CHECK LIST	ANSWERS	MONETARY COST
1. Was an injury involved?	Yes	
2. Describe briefly what happened.	R—— C—— missed sheet he was catching for pressman and ran his left hand into rollers.	
3. How many workers lost time as a result of helping, talking, watching, etc.?	Nine	
4. What was the total amount of time lost by these workers?	Eleven hours	
5. What was the total cost in wages paid for this time lost?		$47.61
6. How many machines were made idle while the employees watched or helped?	One	
7. What was the total cost of these idle machines? (Include overhead cost, lost activity, etc.)		$43.78
8. Describe the amount and nature of damage to equipment, if any.	Broke the teeth out of two fibre gears on the press.	
9. Cost of repairing the machine(s) (total labor and material costs).		$12.18
10. Down-time cost (fixed charges) on damaged machine(s). (Include lost activity.)	Same as item 7.	[$43.78]
11. Cost of damaged stock or products.		None
12. Estimated total cost of repairing, reworking, or replacing damaged merchandise, including any premium rates paid to get work out on time, sorting, additional stock, inspection, etc.		None
13. Time lost by the injured employee on the day of the injury which was paid for by the employer. (Total wage cost.)	Two hours	$3.50
14. Any other time lost by the injured employee for which compensation was paid by the employer (other than Workmen's Compensation) such as days of absence, trips for medical attention, medical cost to the firm if not covered by insurance. (Include cost of equipment and wages of other employees in servicing the injured other than that of supervisor.)	None	
15. Cost of supervisor's time as a result of the accident. Include the time of the supervisor(s) necessary to get the unit back in operation and which could be directly chargeable to the accident, as well as any subsequent time which was needed at a later date in the completion of reports, at compensation hearings, etc.	None	
16. Total cost of supervisory wages.		
17. Total cost of replacing the injured employee (Include recruitment, training, etc.)		
18. Miscellaneous. Describe any loss not included in the above classifications that could be directly attributable to the accident and/or injury.	Employee's hand was bruised but no loss of time was involved except for physical check-up.	
19. Total cost of the accident and/or injury.		$107.07

EYE PROTECTION SERIES
other articles March & April

MAKE EYE PART OF

by **C. F. BURRIS**
Safety Director
International Business Machines Co.
Endicott, N. Y.

Our executives place no financial restrictions on the safety, health and welfare of our employees. This does not mean that we spend money on unnecessary things, but that every dollar that has been spent on our vision program is considered money well-invested.

Some of our experiences indicated that we needed an eye protection program. This background information is outlined in the accompanying material entitled, "Why an Eye Protection Program Was Needed."

Our attack on the eye injury problem was made in two directions:

First, we guarded equipment as much as possible to control flying bodies, such as chips, broken tools, etc.

At the same time, we began a program of eye protection through the use of safety glasses.

Realizing that such a program might take months, or even years, to complete, we began with those operations where the greatest hazards existed. We made it a policy that suitable eye protection must be worn by all employees in:

machining
snagging
heat treating
plating
inspection
maintenance operations.

In a few months the eye injury rate in these divisions was greatly reduced, and the numerous shattered lenses that had stopped flying

Why an Eye Protection Program Was Needed

Over all the years that IBM has been in business, our accident rate has been better than the average for the industry. Until about 1941 or 1942, the rate of eye injuries was no exception in this respect. However, about that time things began to happen that caused us to concentrate our attention on the vision of our employees. First, our exposure increased because of the additional employees needed to meet defense needs. Then, too, the inception of high speed machine and cutting tools and the use of new materials and methods necessary to meet the defense effort created hazards with which we had not previously had to deal.

Within a year's time three of our employees suffered a partial loss of vision when they were struck in the eye by flying objects:

One employee lost an eye when struck by a flying nail.

Another employee lost an eye when a flying chip from a center punch lodged so deep in his eye that it could not be removed.

The third accident happened while an employee was walking in an aisle of our machine shop. We never learned the origin of the flying object.

At the same time we were having an experience of about 400 minor eye cases per month—a rate of about 44 injuries per thousand people per month.

SOMETHING HAD TO BE DONE!

PROTECTION THE JOB

How IBM eliminated loss-of-vision accidents and reduced the injury rate for minor eye injuries from 44 per month to 3.

How to select safety-glass frames.

How to overcome employee resistance to eye protection.

objects were evidence that we had made progress.

At the same time we surveyed other operations very carefully and soon learned that serious potential eye injuries still existed. We took prompt action and expanded our policy to include such operations as:

assembly
printing
testing
receiving
storage
shipping.

This also included all office and clerical employees working within, or any person entering the specified areas at any time.

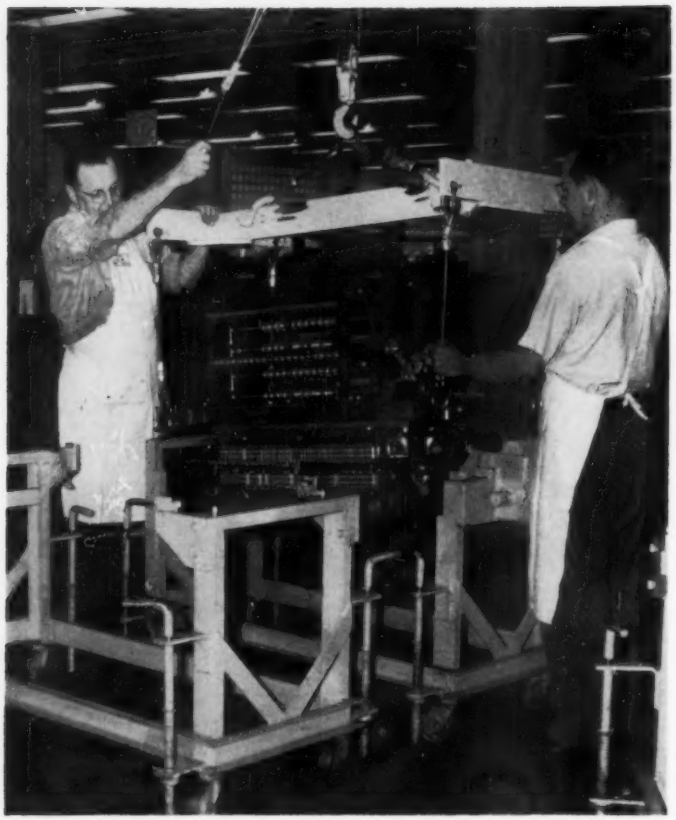
Today, IBM is nearly 100 percent safety-glass-protected. A few isolated areas where office work is performed are exempt. However, the workers in these departments, and all visitors, are required to wear eye protection when passing through any safety glass areas. Safety glasses are provided to all employees free of charge. The only cost to the employee is in the case where corrective vision is necessary. Then he pays for his examination.

This program has been so successful that there has been no loss-of-vision accident since the inception of the program, and eye injuries have been reduced about 95 percent. In fact, where we were having an accident rate of 44 minor injuries per thousand people per month, today the rate is only 3 such cases per thousand people per month, and there is evidence that we will reduce the rate below that point. Certainly this performance justifies continuance of our present protection program. The foremost advantage is from a humanitarian standpoint—we would have it no other way.

Of course, in the beginning we heard many complaints from our employees about having to wear safety glasses. We looked on these complaints as being legitimate and took a personal interest in every employee who experienced discomfort of any kind. We found that, when accurately ground to prescription and properly hardened and when the frames are properly centered and adjusted, safety glasses are as comfortable to wear as so-called "street glasses." Because safety lenses are thicker—necessarily so for the hardening process—and thus heavier, a careful and expert adjustment is necessary.

Some plants order safety glasses by the thousands and hand them out with no attempt at fitting them. When a patient calls for his new glasses in an optometrist's or dispenser's office, sometimes a half hour or more is taken to adjust and fashion the frames to the contours of the nose, ears and face. Then how in the world do some plants think they can hand out a pair of prescription glasses with the remark, "Here are your safety glasses. Put them on and see how they feel."

And that goes for plano glasses, too. To a man who has never worn glasses, lenses of no power some-



times present as many problems to him as the first pair of bi-focals do to some people. After all, he is looking through something even though it is "plain glass." He is conscious of pressure on the sides of his nose and at the back of his ears, and he probably feels somewhat conspicuous.

All glasses, then, must be fitted carefully and accurately by someone who, through years of practice, knows what to do with a pair of optical pliers. Don't leave that very important work to inexpert hands. IBM has full-time licensed dispensing opticians in all plants. They handle all adjusting, order prescription glasses and, upon delivery, verify each pair with the examiner's original prescription. In addition, all workers are advised to take their new safety corrections to their own examiners for verification.

Our dispensers are on constant lookout for scratched and pitted lenses, because visually they are unsuited to the wearer. We have also learned, by testing many old lenses with the standard drop ball test, that age alone does not lessen the effectiveness of safety glasses. On the other hand, deep scratches, chips on edges and pit holes may alter the pattern of tension and thus may change the ability of a lens to withstand impact. Our dispensers have an excellent opportunity to check the surface condition of safety lenses because they are also the technicians of our vision testing program.

We feel that the interest we have taken in each individual has given us a program so effective that, when our employees start work, their safety glasses are as much a part of their jobs as any other tool with which they have to work.

So much for the functional aspects of our eye protection program. Now a brief discussion concerning the cosmetics aspects. We have very definite ideas about the subject and very good reasons to support our thinking.

When we initiated the program, our employees and the local professional people understood that we intended to supply safety glasses for industrial purposes only. Although we appreciated the value of good appearance, we wanted it clearly understood that so-called "street glasses" was a matter between the professional man and his patients. That was 14 years ago and you may remember the metal frames used at that time. Those frames were certainly unattractive and in many cases created a health problem. Some people simply could not wear them because the acid in their systems attacked the metal and caused skin irritation which many times resulted in serious infection.

We worked very closely with two of the leading safety eyewear manufacturers to develop a plastic or acetate frame that would fulfill the requirements indicated in Table 1.

After many studies and experiments, the end result was a frame that met our specifications. At that

TABLE I: Requirements for Safety Glasses Frames

1. **Meet all Federal standards for safety regulations.**
2. **Strength to resist impact.**
3. **Resist temperature changes with minimum breakage.**
4. **Eliminate possibility of electric shock.**
5. **Be fire resistant.**
6. **Be easily adjusted for comfort and remain so after fitting.**
7. **Have a reasonably good appearance.**
8. **Have a neutral color.**
9. **Be made in various sizes to accommodate the wearer.**

time, some professional men thought we were supplying frames that went beyond the realm of "Industrial Purposes." Of course, that was a matter of opinion. Actually, we had succeeded in giving our employees sound eye protection combined with real comfort. After all, that was our main objective.

We, at IBM, look on our vision program as an important segment of our business. We feel that it has played a very significant part in earning for us some of our recent safety awards. Of course, awards, in themselves, are not our main objective. But it is very gratifying to experience so many man-hours of exposure without having any of our employees injured. Finally, it should be emphasized again that our entire vision program was conceived as a service to the employee. The benefits which accrue to the company, important as they may be, are looked upon as by-products of the program.

From an address presented at the 27th Annual Greater New York Safety Convention.
Pictures by courtesy of International Business Machines Co.

Veterans of Safety Elect Officers

At the 15th annual meeting of the Veterans of Safety held in Chicago, Thomas J. Berk, safety consultant, Metropolitan Life Insurance Company, New York, was elected president and Alfred F. Parmelee, president of U. S. Safety Service Co., Kansas City, and E. Willard Merritt, of Walter G. Legge Company, New York, first and second vice-presidents, respectively. Howard Chatfield, Fidelity and Casualty Company, Minneapolis, was re-elected secretary-treasurer. Arthur Naquin, New Orleans Public Service Company, joins G. Stuart Mansfield of Western Printing and Litho Company, Poughkeepsie and Joseph Travers of Pacific Maritime Association as Trustees of the Organization.

Veterans of Safety, an international organization of safety engineers having fifteen or more years in accident prevention, finds itself more and more making its influence felt throughout the nation and the world. To assist in furthering this work, Mr. Berk has appointed the following vice-presidents for "grass-roots" work among members in the newly established regions:

Eastern Region, Charles Gallaway, American Optical Company; **Western Region,** Charles Hagerty, Marine Corps Base, Camp Pendelton, California; **Southern Region,** Fred Claiborne, Stanolind Oil & Gas Company, Tulsa, Oklahoma; **Northern Region,** Robert Douglas, Detroit Edison Company, Detroit, Michigan; and **International Region,** Col. Leonard Carter, U. S. Air Force.

Many safety leaders have accepted assignments to aid in the administration of Veterans of Safety. Mr. Berk announced he has received the acceptance of the following to serve:

Membership Chairman – Glen Latshaw, Northwestern Bell Telephone Company, 224 South 5th Street, Minneapolis 2, Minnesota; **Archives**–D. C. Duncan, Appalachian Electric Power Company, Roanoke, Virginia; **Awards**–Murray D. Smith, Davis Emergency Equipment Company, Boston; **Directory of Membership**–J. B. Hamblen, The American Oil Company, New York; **Program**–Charles Dever, Mine Safety Appliances Company, Chicago; **Research**–A. C. Blackman, California State Department of Labor, San Francisco; **Historian**–F. Rutledge Davis, Davis Emergency Equipment Company, Inc., Newark, New Jersey; **Mutual Assistance**–John Sandel, Zurich Insurance Companies, Chicago; **News Letter Editor**–Michael F. Biancardi, Allis-Chalmers Manufacturing Company, West Allis, Wisconsin.

The **Presidential Advisory Committee** includes: Charles Dever, immediate Past President as Chairman with Charles A. Coutts, Northern State Power Company, Minneapolis and T. R. Leadbeater, Todd Shipyards Corp., New York.

Further information may be obtained by writing to Thomas J. Berk, Metropolitan Life Insurance Company, One Madison Avenue, New York 10, New York or Howard Chatfield, Fidelity and Casualty Company, 8 Groveland Terrace, Minneapolis 5, Minnesota.

Gas Industry Plans 1958 Safety Crusade

A safety crusade is being launched by the American Gas Association in 20 or more cities during 1958, it was announced by J. Theodore Wolfe, president of Baltimore Gas and Electric Co.

Mr. Wolfe, second vice-president of A.G.A. and chairman of its Executive Safety Committee, said two-day courses for effective accident prevention and control will be held in states which have not kept pace with the industry in the reduction of employee accidents in the past three years. The industry as a whole, he pointed out, has improved its safety record for nine consecutive years to an all-time low of 8.68 disabling injuries per million man-hours in 1956.

Training courses for supervisory personnel have been scheduled for the following cities, with exact dates to be arranged later by A.G.A. Accident Prevention Committee members:

January–Houston, Texas and Tulsa, Okla.; **February**–Tampa, Fla., and Jackson, Miss.; **March**–Raleigh, N. C., and Richmond, Va.; **April**–Atlantic City, N. J., and Indianapolis, Ind.; **May**–St. Louis, Mo., Minneapolis, Minn., and Sioux City, Iowa; **June**–Kansas City, Mo., and Chicago, Ill.; **July**–Denver, Colo.; **August**–Las Vegas, Nev., and Portland, Ore.; **September**–Dallas, Texas; **October**–Little Rock, Ark., and Atlanta, Ga.; **November**–Boston, Mass.

Success in these courses covering the essentials of a day-to-day company safety program, Mr. Wolfe said, should have these beneficial results: (1) The manual rate of insurance for gas companies should be lowered in the next three years, with a resulting saving of thousands of dollars on insurance, both for individual companies and the gas industry collectively; (2) millions of dollars now being spent for compensation costs, resulting from disabling injuries, will be saved; and (3) most important of all, he said, the industry's employees and their families will be spared the hardships and suffering that are the products of accidents.

BETTER BONDING

by **DANIEL J. GOEKE**
Vice President
Larsen Products Sales Corp.
Bethesda, Md.

Many great advances have been made in the construction field since the end of World War II: New types of building materials, new techniques in construction, and a totally new revolutionary process of bonding cementitious materials.

To repair concrete, it was formerly necessary to use the costly, time-consuming method of chipping, drilling, roughening, acid washing or scarifying the old concrete base prior to applying a slurry coat of cement to bond the new topping. Oftentimes this did not prove to be 100 percent effective. Today, with new bonding materials you can bond new toppings to old, and plaster directly to concrete or any structurally sound surface. In many cases, the bonding materials are stronger than the materials being bonded.

Basically there are the following materials for bonding cementitious materials: Synthetic Latex Emulsions, Epoxy Resins, and Aqueous Resinous Emulsions of the vinyl type. It may be of interest to see how the bond is formed between the new surface and the old and what the applications and uses are for these products.

Synthetic Latex Emulsions are used as an admix in cementitious materials, giving these normally brittle materials the qualities of resilience, elasticity, durability and good adhesion. New concrete can be bonded to old either by adding the latex bond to the new concrete or by using a thin mortar mixed with the latex to form a paste. The paste is applied to the old surface and the new topping applied to the base.

Epoxy Adhesives consist of liquid polymer, liquid epoxy resin, amine catalyst, and inert filler. By variation of the type and amount of each ingredient, innumerable variations in adhesive properties may be obtained. Epoxy Adhesives permit the successful bonding of old concrete to old concrete, or new concrete to old. When using these materials, care must be taken to apply topping before the adhesives have dried out. Such materials differ in nature from a straight film of Aqueous Resinous Emulsions of the vinyl type. The latter dry to a film state before topping material is applied.

Aqueous Resinous Emulsions of the vinyl type will bond new plaster base or finish coats to concrete, or to any structurally sound surface. The same applies to bonding concrete. These liquid plastics have a viscosity about equal to paint for the sole purpose of application. The dried film is stable when the water has evaporated, and remains flexible, free from any tendency to harden or crack. This flexibility assures both permanent adhesion and ageless bond which never lets go. The vinyl type of bond is vermin-proof, non-toxic, non-deteriorating, incapable of supporting flame, and highly resistant to most acids and alkalies.

Films of bonding materials have a wide temperature range from a minus 35 degrees to above 300 degrees F. without a failure in the bond. Tensile strength varies from 50 to 1200 lbs. per sq. in. depending on the bonding material and materials being bonded together, and a minimum shear strength of 175 lbs. per sq. in.

A classic example of the strength of a bond is the test conducted by the California Highway Department using epoxy-thiokol adhesive to bond new concrete to old. They used concrete beams 6″ x 6″ x 30″ which were broken in flexure. One end of each broken beam was coated with an adhesive of epoxy-thiokol, and a new section bonded to each. The new concrete was a dry mix having a slump of 2″ to 2½″. After curing from two to four

TABLE 1: Rules for Bonding Cement-Type Materials

1. **Follow the manufacturer's specifications.**
2. **Use the material for the purpose it was designed.**
3. **The surface must be structurally sound.**
4. **All surfaces should be free of rust, grease, oil or wax.**
5. **Do not apply over water-soluble paints, frozen concrete or dead plaster.**
6. **Smooth, glossy, porous or semi-porous surfaces that are clean and dry need no special surface preparation.**
7. **Select a product where the finest obtainable research, engineering materials, production techniques and human abilities are the basic factor in marketing a superior product.**
8. **Adhere to good mechanical practices.**

sugar acids by washing the floor, then coating the floor with a bonding material in preparation to receiving the new concrete topping.

Today with the improvement of bonding materials you now can bond cementitious materials to any structurally sound surfaces, such as glass, marble, tile, steel, wood, lead, concrete, and oil-painted surfaces. A few simple rules are given in Table 1.

Why are bonding materials so strong? How do they work? The answers to these questions are as follows:

First, you achieve a mechanical bond by the penetration of the bonding material into the pores of the old surfaces, forming a mechanical interlock.

OF CEMENT-TYPE MATERIALS

Out of the research laboratories have come new bonding materials that are strong and versatile in both repair and new construction.

weeks, the beams were again subjected to flexure. All breaks occurred in the concrete; the bond remained intact.

Abell-Howe Company, Engineers, of Chicago, conducted field tests in which they used Poly-vinyl Acetate emulsions for bonding agents. They poured a reinforced 4" thick x 18" x 18" slab, cured for five days. They used a 3700-pound pull; the bond did not break, but the entire corner of the base slab started to come up.

No Cure-All

These materials that possess such qualities as a wide temperature range, strong shear and tensile qualities, plus having a fire protection element, have made a place in the construction market of today.

The biggest fallacy regarding bonding materials is that they are "Cure-Alls." This is not true; they are by no means a cure-all. Good mechanical practices must be adhered to. The old surface which is to be refinished must be structurally sound. So many times we hear that a bond failed, only to discover that the old surface had failed simply because it was not structurally sound. An example of this type of work is a plant in which the original floor was eaten away with sugar acids. It was decided to put a topping of one inch of concrete over the old surface. Result: The old base crumbled after a week of heavy plant traffic. The blame was placed on the bonding material used. Yet examination of the broken pieces showed that the base had given way—and not the bond.

This same application was 100 percent successful in a candy factory in New England. Care was taken to make certain the old concrete surface still had life in it. Next step was to neutralize the

Secondly, as the moisture evaporates from the bonding material, adhesion takes place.

Thirdly, a chemical reaction takes place as the new material is applied. The bonding agent penetrates voids and forms a bond within crystalline structure of the new concrete.

Bonding materials may be applied by brush, roller, or spray. In large areas it is advisable to spray. Using a spray saves in labor and material. One man can spray 15,000 sq. ft. in a day and get up to 650 sq. ft. per gallon.

In new reinforced concrete slab construction, bonding agents have eliminated the costly operation of chipping, grinding and polishing concrete ceilings. Today plaster or acoustical plaster may be bonded directly to exposed concrete surfaces. After the forms have been removed, the bonding material is sprayed on without any prior preparation, then allowed to dry to the touch before plastering. The finished coat of plaster is applied directly to the coated concrete, covering fins and filling hollows by doubling back. Sometimes months elapse before the plaster is applied to the bonding agent. This in no way affects the bond. As a matter of fact, it is common practice on large apartment houses, hotels, and office buildings to follow this procedure.

In a building that is under construction, for example, bonding agents are being used to bond plaster to all the ceilings and other exposed concrete surfaces. The reinforced concrete elevator shaft connecting the two main wings is to receive, on the exterior, a bed of mortar bonded to the shaft to receive mosaic tile. The backs of the tile are to be coated with a bonding agent, plus a bonding agent to be used in the grout to prevent the grout from drying out, cracking and falling out.

More and more architects are specifying vinyl bonding materials because they give them more flexibility in design. Now plaster can be applied directly to concrete. The problem of bonding mortar to concrete has been licked. They can now use delayed toppings as thin as one-half inch bonded to the base floor. Stucco no longer calls for wire lath. Cement plaster now can be bonded to smooth tilt-up walls.

Bonding agents are also being used in the maintenance and renovation of older buildings. In one case, the problem was how to make new smooth walls out of old, oil-painted, rough textured walls. To remove all the plaster from 33 stories was out of the question. The solution was to remove all loose paint and dead plaster, spray all walls and ceilings with a bonding agent and put a ⅛″ coat of white lime putty plaster over the old walls. Here bonding agents eliminated the tearing out of old plaster, relathing and putting a three-coat plaster job on the walls and ceilings, which would have cost many times over the price of bonding plaster to an oil painted surface. Bonding agents have been used successfully in all types of renovations: Bonding plaster to old tile, to old glass block, to lead x-ray shields, bonding a mortar bed to an oil painted surface for ceramic tile, and to many other structurally sound surfaces.

In the industrial field, bonding agents have been used to solve many problems in new construction, renovation, maintenance and repairs. The Eaton Manufacturing Company in Cleveland had the problem of how to install two 75-ton milling and drilling machines on a concrete floor. The machine itself had to rest on piers rather than the floor. To make one pour to include these 80 piers was an expensive proposition. The base slab was to be 36″ thick. It was decided to pour the base slab, cure it, and then place the forms for the piers. A bonding agent was brushed on the base slab at spots where the 80 piers were to be placed. With the simplest forms, these 8-inch piers were later poured with assurance of a permanent bond to the base slab. The two 75-ton machines have been operating on these piers for over a year. No reinforcing rods were used to anchor the piers; merely a bonding agent was used to assure firm anchorage of the piers.

Also, bonding agents, when used with quick-setting cement toppings, permit the laying of new floors, ramps, driveways, and sidewalks, which can be used for heavy traffic within two days. The assurance of a permanent bond costs as little as 4 cents per square foot.

Thus, through modern science, organic chemistry has solved the problem of bonding inorganic cementitious materials.

From an address presented at the 1957 Building Research Institute Conference on Adhesives & Sealants. Picture by courtesy of Pittsburgh Corning Corp.

Expecting an Order?

You'll get it quicker if your postal delivery zone number is on your order blanks, return envelopes, letterheads, etc.

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address—place it after the city, before the state.

Soft Drink Industry Safety Campaign

The Safety Committee of the American Bottlers of Carbonated Beverages has launched a campaign to cut down the accident rates in bottling plants in cooperation with the National Safety Council.

During the year 1958, the Safety Committee of the American Bottlers of Carbonated Beverages will send to their members special mailings concerning safety. Each mailing will include two pieces for posting. One of these will be for the instruction of plant personnel —the other for driver salesmen. Their purpose will be to assist in reducing accidents and promoting safety awareness.

The billion dollar soft drink industry is "safety conscious" and always on the lookout for services and devices that will help make their operations as safe as possible. The 1958 International Soft Drink Industry Exposition and Convention in Atlantic City, November 17–20 will offer an opportunity for firms in the safety field to make their products and services known to bottlers from all parts of the country.

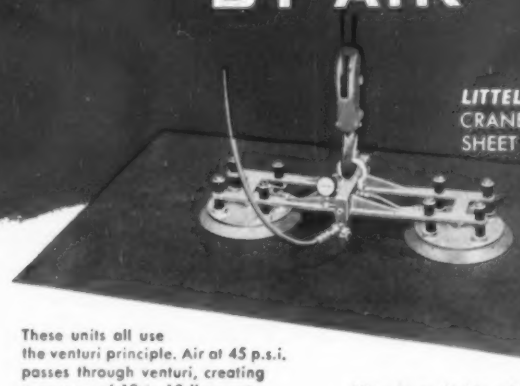
Building Exits Code

The 1957 edition of the Building Exits Code, NFPA No. 101, has been published by the National Fire Protection Association. It deals with building exits and related life safety features from fire in buildings of all types and is now universally recognized as a proper guide to life safety in buildings. It applies to the following occupancy groups: assembly, educational, institutional, residential, mercantile, office, industrial, storage, and miscellaneous, and provides separate exit requirements for each based upon the conditions of occupancy. An example is institutional occupancies where people present are either restrained or bedridden; therefore the Code specifies much higher degrees of fire safety than for buildings occupied by able-bodied persons.

The Building Exits Code is concerned not only with exits, but also with those features of construction and protection which bear upon exit safety. Where automatic sprinklers are provided, for example, many other precautions are relaxed. Interior finish of buildings, alarm systems, exit lighting, signs, air conditioning, and other special features are all covered.

The Building Exits Code is not intended as a building code but is so written that it can be utilized as a supplement to building codes and should serve most usefully in dealing with a number of important fire safety matters which cannot be covered in detail in any building code. It is available from the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts, in a 256-page illustrated book for $1.50.

LIFT or MOVE
SHEETS or BLANKS
BY AIR



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(For details, use Key # N-6 on card on page 1)

Floor Care Movie

A special 16-minute film, in full color and sound, showing how to maintain a floor properly, has just been completed for the makers of Johnson's Wax and is available to its maintenance distributors throughout the country.

The film demonstrates the best way to clean and wax a floor from start to finish, using latest techniques and equipment. In addition to being informative, the film is entertaining. A character named Wilbur demonstrates the wrong way to treat a floor, providing both a lesson in contrast and comic relief.

Groups interested in floor maintenance can arrange to see this film free by contacting the local Johnson's Wax distributor, who will furnish a pamphlet on the film and make a date for its showing.

Johnson's distributors are prepared not only to show the film, but give a complete custodial training session, including a question-and-answers period moderated by a Johnson expert; demonstrations of floor care techniques, with an opportunity for guests to participate; product demonstrations with emphasis on how specific problems can be solved, and a distribution of helpful literature on floor care.

Evaluate Your Chemical Safety Program

by **LEONARD A. BAKER, JR.**
Safety Engineer
Johnson & Higgins
New York, N. Y.

CHEMICAL HAZARDS SERIES
other articles Jan. & March

Accident prevention is a field where there is an ever-present danger of being too close to the problem to evaluate it properly. The smaller the plant, the more danger that such a situation will occur.

Any safety program can be improved upon, merely by stepping back periodically and taking a look at the "big picture." You can get help in your program by using the facilities of a state labor department, manufacturer's associations and insurance companies. To my mind, the outstanding contribution to be made by an outside agency is a proper evaluation of that program—one which will separate the weak points from the strong—one which will point the way to areas of future concentration of effort. Representatives of such agencies have the advantage of being divorced from daily, intimate contact with the operation. The benefits of their knowledge of what has worked at other companies as a yardstick against which to compare is obvious. On the other hand, there is nothing to prevent the "in-plant" safety man from evaluating his own program. There is merit in each.

What would a proper evaluation consist of? It's not just calculation of accident rates; not merely an analysis of investigation reports and the predominating accident factors; certainly not restricted to an inspection of the plant, however complete —it's these things and many more . . . "the big picture!"

To appraise your program, there are certain elements or basic areas that must be considered. It should be emphasized, however, that there

is no standard program or "formula" which can be applied with equal success to each and every company. Actually, just the reverse is true—safety programs must be "tailor-made." Although an appraisal can be broken down into standard elements, it is in the various facets of these elements that the program must, of necessity, reflect the set of conditions within which the individual plant operates.

A check list of standard elements is often helpful in making a safety survey or appraisal. The eleven elements listed below cover very broad areas. Since the individual differences of separate companies vary so widely it would be impossible to go into each element thoroughly. However, a few comments or questions that might be asked in considering each element may open some new avenues of thought. While the questions may seem fairly elementary, it is surprising how often some of them are overlooked and they can also be translated into the more complex ideas appropriate to individual situations.

1. Full Support of Local Management

Although it is axiomatic that whole-hearted management support is essential, this is perhaps the most difficult element to appraise. One basic question is whether or not management is getting the facts on accidents costs or savings, and getting valid comparisons of their accidents with those of other companies or national averages. A general impression of the degree of management support can be obtained through discussion of the safety program itself, and through the interest displayed in the survey and its results.

2. Well Defined Responsibilities

Does the plant safety man carry the entire burden of conducting meetings, indoctrinating new employees, following up on repair of hazards, investigating accidents, etc.? At the other extreme, is there no one responsible for safety work, it being "understood" what should be done? There should be a clear understanding that the safety man occupies a **staff** position, spelled out in writing if possible. **Line** responsibilities should be just as clearly outlined. Where there are position descriptions, safety responsibilities should be included.

3. Complete System of Accident Reports & Analyses

Are investigation reports made, and are they analyzed periodically? Is a definite conclusion reached as to future action to prevent a recurrence? Is the form used suitable for the operation, or should a new one be designed? Is the analysis derived from the reports useful, and is the information put to use?

4. Adequate First Aid and Medical Facilities & Procedures

Are only trained persons rendering first aid? Is a list of authorized first aiders posted? Are they operating under a physician's Standing Orders? Is the first aid room or dispensary adequately equipped and conveniently located? Are **all** treatments recorded, and is a record maintained which will readily disclose accident repeaters?

5. Job Training & Orientation

Is there a formal entrance interview for new employees from a **written** check list? Are safety committee meetings used for training members or is it just a rehash of reported hazards?

6. Protective Clothing & Equipment

Determination of whether or not adequate equipment is in use during the period of the survey is a fairly straight-forward problem. Of equal importance is the question of whether its use will continue, and whether proper equipment will be provided for new operations. Is a record of the equipment to be used for each job available? How are requirements determined and by whom? Is there any problem involving fitting of the equipment?

(Continued on the next page)

7. Use of all Possible Safeguards

Here, again, the evaluation of this element is primarily dependent upon an inspection of the plant. If an analysis of past accidents by Proximate Cause is available, it will be helpful.

8. Housekeeping

Being convinced that there is a very definite, if somewhat intangible relationship between safety and good housekeeping, this element is included, and appraised through inspection.

9. Self-Inspection

If yours is a small plant, the chances are that you are inspected by outside agencies less frequently than those larger in size. Injuries won't wait for one of these people to discover a hazard, so you must depend upon self-inspection to a greater degree. Is self-inspection on a regular basis? Are items other than safety included? Is a check list used? Does the inspection cover unsafe acts and procedures as well as hazards? What is done with the results of the inspection?

10. General Safety Selling (Publicity)

Although these elements can be standard, the program built around them is far from being standard. It is in this element of General Safety Selling that we encounter the greatest diversity. In discussing this element, I can only suggest safety publications, the outside safety engineers who visit you, and your own fertile imaginations as sources of ideas needed to maintain an ever-fresh approach.

11. Utilization of Outside Agencies

As was indicated in the opening paragraphs, technical assistance for specific problems in a chemical safety program can be obtained from state labor, hygiene or safety departments; manufacturers of safety and hygiene equipment and their associations; and insurance safety departments.

From an address presented at the 27th Annual Greater New York Safety Convention. Picture by courtesy of Mine Safety Appliances Co.

Safety a State of Mind

The employee who has frequent industrial accidents is likely to be one with poor safety attitudes, according to a study recently completed at New York University's Center for Safety Education. Dr. Earle Hannaford, who conducted a survey of 769 male employees and 481 male supervisors from 54 industrial organizations, also concludes that employees working for supervisors with poor safety attitudes tend to have more accidents.

"We have been looking for several years for some clear-cut evidence of the importance of faulty attitudes as causes of industrial accidents," Dr. Walter A. Cutter, director of the Center for Safety Education, said in discussing the results of Dr. Hannaford's study, which are reported in a doctoral dissertation. The study also produced two safety-attitude tests that the NYU safety center will publish in the near future. "These tests should have real value in strengthening industrial safety programs," said Dr. Cutter. They were developed by Dr. Hannaford with the cooperation of 450 industrial organizations.

In his survey Dr. Hannaford tested groups of 20 accident-free male employees and groups of 20 with one or more disabling injuries in the five-year period 1948 to 1952. He found a positive relationship between safety attitudes and accident experience and a significant difference between the safety attitudes of accident-free employees and those with one or more disabling injuries. He also found a positive relationship between the safety attitudes of supervisors and the accident experience of the employees they supervised.

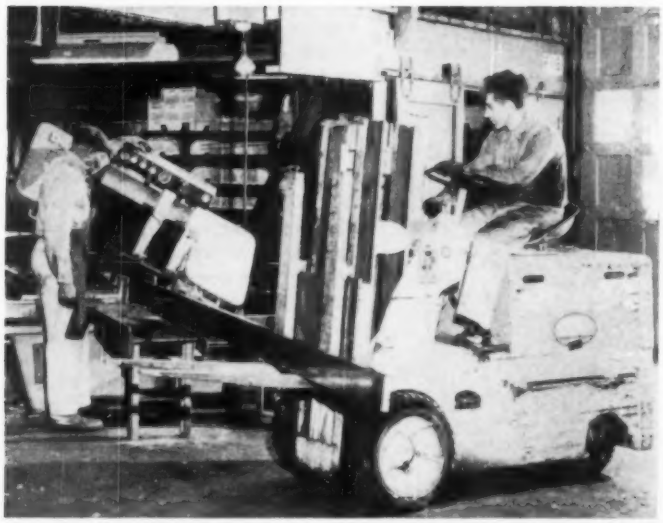
Dr. Hannaford concludes that the time, money, and effort spent in developing and maintaining good safety attitudes are amply justified, and that the use of safety results to judge employee and supervisory performance for purposes of advancement is sound.

Dr. Hannaford, who received his Ph.D. from the New York University School of Education in October, is a safety engineer for the long lines department of the American Telephone and Telegraph Company. A graduate of Tufts College, he obtained a master of science degree in electrical engineering from Georgia Institute of Technology in 1927. He has taught at both NYU and Georgia Tech.

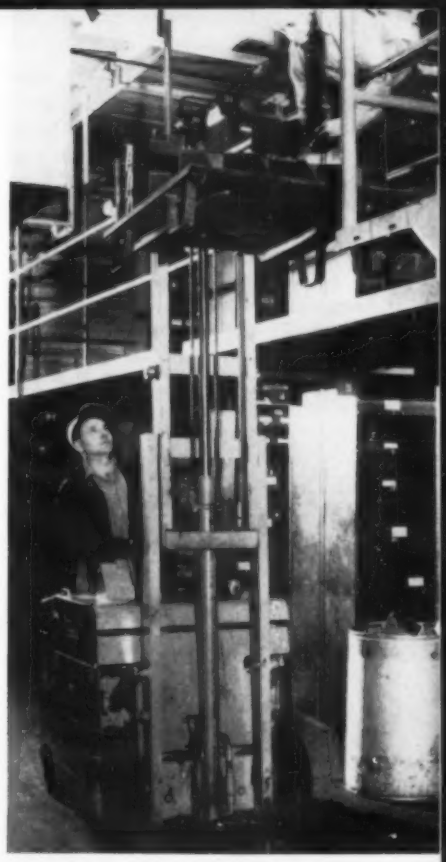
Widely known in the field of industrial safety, Dr. Hannaford has served as general chairman of the public utilities section of the National Safety Council. He is the author of a number of texts in engineering and management and numerous articles and treatises on safety.

Industry's Handyman:

The Lift Truck



This picture illustrates use of fork truck as support in sawing cold rolled steel bar. Truck also assists in loading of crated machinery.



Stockman on catwalk alongside second story steel bins loads tote pans on to skid which is lifted by fork truck.

Electric industrial lift trucks were recently included as part of a program to improve material handling techniques at The Osborn Manufacturing Company, Cleveland, Ohio. The trucks, besides performing effectively and efficiently, allowed outstanding maintenance and operating cost savings.

These results are related by Mr. A. E. Rickel, Production Manager of the Machine Division, who says, "When we converted to electric lift trucks back in 1955, considerable savings in maintenance costs were reflected each month. Moreover, we found that the electric trucks can function throughout the day at lower operating costs."

The Osborn plant covers a two-block area including from one to four floors and operates as two distinct divisions—Machine Division and Brush Division. The Machine Division warehouse area encompasses 10,000 square feet of space and only recently doubled its storage capacity by adding a second tier of bins for materials. There are 55 racks which hold from 42 to 202 tote pans. These are used to store bushings, lock washers, nuts, machine bolts, cap screws, etc. Also kept here are manufactured stock parts made by the company for its finished products. The second story of bins is 8 feet high and 110 feet long and are stacked on bins of identical height. Steel catwalk aisles run between the bin tiers and along the outside. The forks of a lift-truck reach up to the outside catwalk for materials. It works in a 7-foot aisle.

"Between 25 and 30 percent of our time is saved by using this model" estimates Mr. Walter Martin, foreman of raw and finished stores. "It greatly simplifies movement of materials across our various departments," he added. In the area of material handling, Osborn intends doing more palletizing and increasing the number of stack bins for job layouts.

Most materials received are handled by cranes which range from 500 pounds up to 20 tons in capacity. All goods are received and shipped through a rail siding which accommodates three cars, and three

The versatile industrial truck is a machine-of-all-work, capable of all sorts of tasks and giving production a lift.

truck docks which can take care of 11 over-the-road trailers at a time. As far as shipping is concerned, the fork trucks handle that which is loaded on closed top trucks and the cranes unload open top truck beds. Forks are also used in loading rail and freight cars.

Osborn's flow of production is simple to state but rather complicated in execution. Steel, grey iron and non-ferrous castings, fabrications, and steel stock together with finished parts must be on hand to produce the extensive range of finished products.

The latest of the company's developments is the automatic foundry line for casting production. The first to be manufactured, it is a complete foundry production system integrated into one automatic unit including molding machines, closing and shakeout units, together with necessary transfer conveyors.

Pictures by courtesy of Automatic Transportation Co.

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(For details, use Key # N-7 on card on page 1)

National Conference on Materials Handling

A national conference on materials handling, was announced by John C. Somers, chairman of the American Society of Mechanical Engineers' materials handling division and president of Industrial Products Engineering Co., Long Island City, New York. The conference will be held in conjunction with the National Materials Handling Exposition, to be produced by Clapp & Poliak, Inc., New York, exposition management firm, at the Public Auditorium, Cleveland, June 9 to 12, 1958.

"Few engineering problems which face management today are as important as materials handling," Mr. Somers said. "Only ten years ago it was virtually unknown as an important factor and some of the practices and equipment adopted became out-moded almost as soon as installed. The need for a new appraisal of this fast growing engineering science is an imperative one and we believe the A.S.M.E. can provide the leadership for bringing about some balance in this field.

Cost Reduction

"Despite a decade of constant effort, materials handling remains one of the few places where substantial cost reduction can be effected. Materials handling is the backbone of automation. Progress toward the goal of the automatic factory will be slow unless a true science of moving materials is developed. This means reliance, not on one type of equipment, but on a system which uses the most appropriate equipment for the specific need.

"The National Materials Handling Exposition will have one of the largest and most varied displays ever gathered of materials handling equipment. We have chosen to hold this conference concurrently with the show because these exhibits will provide an important practical background to the scientific discussions," Mr. Somers said.

Show Injury Costs

A reduction in all phases of accidents during the 2nd quarter of Fiscal Year 1957, has been reported by John J. Dougherty, Safety Superintendent, at the Naval Aviation Supply Depot, Philadelphia, Pa.

Dougherty credits the reduction mainly to the recent adoption of a new method of advertising the costs of accidents and injuries. This new system, which was devised by Rear Admiral John W. Crumpacker, Supply Corps, USN, Commanding Officer of the Aviation Supply Office and the Naval Depot, works as follows:

The Naval Aviation Supply Depot's Safety Division, which services four Naval activities located at the Depot where 4,400 people are employed, prepares quarterly bills for each supervisor in whose jurisdiction an accident or injury occurs.

The bill includes an itemized breakdown of each accident or injury and reflects the following costs: Employee time, supervisory time, medical costs, cost of investigation, material damage, and miscellaneous cost.

The itemized breakdown used for first aid cases is the average cost for the case while the breakdown on all other types of accidents is estimated as accurately as possible with available information.

A breakdown of the costs for the first two quarters of Fiscal Year 1957, during which it has been in effect, shows the reduction effected by this novel approach to safety.

	First Quarter*	Second Quarter*
First aid injuries	132	125
Disabling injuries	6	2
Fork truck accidents	2	1

* Figures apply only to Aviation Supply Office and the Naval Aviation Depot.

The First Quarter bill amounted to $5,020.28 compared with Second Quarter expenses of $4,164.50; a reduction of $855.78.

"Although there is room for improvement in the program, the savings have been considerable, and come at a time when all government agencies are attempting to stretch their allotted dollars," Dougherty added.

Safety Maintenance SALUTES

A SAFETY IDEA

The Man in the Glass Fiber Suit

At a recent fire fighting exercise held at the Standard Oil Co. (Ohio) refinery, Lima, Ohio, employees of that organization donned an aluminized glass cloth suit and repeatedly entered a flaming building into which high-test gasoline was being pumped under pressure. Recorded temperatures exceeded 2,000 degrees F.

The test, under the direction of Robert Jewell, refinery Fire Insp. Engr., was made to simulate an emergency situation that has concerned safety officials at the refinery: what to do in the event fire took place in a control center, making the closure of valves impossible.

Repeated entries into the test were made by various members of the fire and maintenance crews of the refinery who found that the complete garment could be put on by the wearer unassisted in less than two minutes. Refinery Safety Director John Hogan and other officials expressed satisfaction as to the willingness and confidence of employees to undertake the test.

Another feature of the suit is the fact that a man can be doused with water while in the flames without fear of scalding. The total suit made of glass weighs less than 26 pounds and gives the wearer excellent maneuverability. Suits similar to the one illustrated are widely used throughout the petroleum, ceramic, fire fighting, aircraft and guided missile, chemical, and public utility fields.

Picture by courtesy of Fyrepel Products, Inc.

Achievements and Awards

The H. M. Harper Company, of Morton Grove, Ill., recently received an award for its record of more than one million man-hours' operation without a disabling injury. The award, made by American Motorists Insurance Co., was for the period of March 18, 1957 through November 5.

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Said to be a new world's safety record for all manufacturing plants of the rubber industry has been set by employees of a major footwear and general products plant of United States Rubber Co. Employees of the Mishawaka, Indiana plant have now worked more than 10,250,040 man-hours—the former record—without disabling injury. They have operated the plant accident-free since November 28, 1956, and continued to add hours to the record, according to Wesley M. Graff, safety director for the company.

R. A. Herrly, factory manager at Mishawaka, calls safety an "everyday project" at the plant. "We make a continual effort to keep all employees from top to bottom safety conscious and this effort has now paid off—and we intend to make it continue paying dividends," says Mr. Herrly.

Von G. Cork heads the safety department of the plant which has also set a previous safety record in the rubber industry. In 1955 the National Safety Council presented the plant with an award for establishing a record as the safest footwear plant in the rubber industry.

The former holder of the safety record for the entire rubber industry was a sister plant, the U. S. Rubber Co. footwear plant in Naugatuck, Conn. It established the record, now broken by the Indiana plant, in 1956.

• • •

Harold E. Hewitt, of Peoria, Ill., assistant personnel manager for the Bemis Bro. Bag Co., has received two awards in recognition of his prompt and effective action in reviving the victim of a lightning bolt. Hewitt was awarded the National Safety Council's President's medal and the Certificate of Award, issued by the President of the United States through the American Red Cross. Last July, Hewitt, assisted by Clark E. Altig, of Greenview, Ill., applied artificial respiration for 35 minutes to Neil Dorgen who had been struck by lightning during a severe thunderstorm. Altig was given a Certificate of Assistance by the National Safety Council.

Hewitt is well known in Peoria for his work with the American Red Cross and the National Safety Council as a first-aid teacher, including artificial respiration, as well as instructing the foremen and first-aid teams at Bemis Bro. Bag Co. He is a member of the executive committee of the Pulp and Paper Section of the National Safety Council, a member of the Central Illinois Chapter of the American Society of Safety Engineers, and a member of the Veterans of Safety.

• • •

Postmaster General Arthur E. Summerfield has accepted a "Certificate of Achievement" from the Inter-Industry Highway Safety Committee for the Post Office Department's participation and leadership in the "1957 National Vehicle Safety Check Program." The Department's participation involved not only the thorough inspection of many thousands of postal vehicles all over the nation, Mr. Summerfield noted, but postmasters and other postal officials in thousands of communities assumed leadership in promoting the campaign through publicity releases, appearances before civic, professional and fraternal groups, programs over radio and TV and personal direction of community safety efforts.

• • •

Precision machinists in the Roll Shop Department at Bethlehem Pacific's Los Angeles plant were congratulated recently by plant officials at an informal party honoring the completion of thirty years work without a lost time accident.

• • •

Minnesota and Ontario Paper Company has been named winner of the Arthur Hoyt Scott Safety Award for the second successive year following another outstanding record in safety performance. In winning, M & O moved a step closer to permanent possession of the handsome sterling silver bowl which is presented annually by

Scott Paper Company to one of the companies in the Pulp and Paper Section of the National Safety Council.

The annual winner is given possession of the bowl for one year and also receives a wall plaque for permanent retention. The first company to win the award three times may keep the bowl permanently.

Safety Director D. L. Eisenach accepted the trophy in behalf of M & O which posted an accident frequency of 1.39 per one million manhours of work. By comparison, the accident frequency for the pulp and paper industry was 7.24.

The Scott Award is the first of its kind to be offered for a multi-plant safety operation. Award winners are selected by a Board of Judges chosen by the Pulp and Paper Section of the National Safety Council. Although accident frequency is given important consideration, it is not the only factor upon which the Board bases its decision. Such factors as accident severity, reductions in accidents, and community service in the field of safety all are weighed carefully before a winner is selected.

• • •

The world's largest insulating fiberboard plant is also its safest. That fact was recognized recently as the National Safety Council presented an award of honor to The Celotex Corporation "for the best (safety) record in the building board industry—2,015,533 injury-free manhours, Sept. 10, 1956—Feb. 15, 1957." The record was established at the Marrero, La., plant. C. Eddie Hoctel, Jr., director of safety for the Marrero plant, stated that the competitive award was based on the long injury-free record and also on the fact that the Marrero plant accident frequency was only 1.36 persons injured per million manhours of work, approximately one-seventh of the industry average.

Celotex has some 2,100 employees in its Marrero plant, making it one of the largest employers in the New Orleans area. Said Hoctel: "We make the program work by taking it to the man on the job. We use posters, handout pieces, safety meetings, and personal contacts to create one single

Each of these 7 Edmont lines is job-fitted to Cut Costs

Neox No. 924 . . . 8 styles

NEW "FLEXIBLE NEOPRENE" COATED GLOVE: Edmont's popular reinforced neoprene (Neox) is now as flexible as plastic. Gives maximum protection for all-around use. Especially resistant to cutting, snagging, oil, acids and solvents. All gloves are of uniform quality, due to Edmont laboratory control of compound.

Grab-It No. 62W . . . 11 styles

POSITIVE NON-SLIP GRIP, WET OR DRY, makes the Edmont Grab-It, with rough-textured natural rubber coating, the safest general handling glove on the market. Now made in curved-finger, wing-thumb pattern which gives a perfect fit.

Werx No. 151 . . . 2 styles

OUTWEARS CANVAS 4 TO 1, and costs far less than goatskin. Edmont's Werx glove is ideal for dry materials handling. Special plastic-impregnated material is very comfortable and has an excellent grip, is lint-free, moisture repellent, washable.

Monkey-Grip No. 31 . . . 13 styles

JOB-FITTED FOR ABRASIVE WORK: Edmont-compounded vinyl coating on Monkey Grip gloves insures uniform long wear. Frequently outwears leather. Exclusive pattern, with seamless palm, wing-thumb and curved, preflexed fingers, fits every part of the hand. Also available in triple-thick palm styles for extra protection and wear.

Redmont No. 938 . . . 6 styles

FOR HEAVY DUTY LIQUID-PROOF HANDLING: Redmont gloves have a 30% thicker coating of red Neox (reinforced neoprene) with a special cured-in, safety-grip finish. Recommended for maximum protection and long wear under severe conditions. Wing thumb, seamless palm, curved fingers.

Grappler No. 363 . . . 5 styles

HEAVY DUTY DUROX COATING, on Edmont Grappler gloves, has exceptional wet-grip characteristics. The exclusive reinforced plastic coating outwears ordinary plastic up to 50%. Wing-thumb, curved finger pattern provides maximum comfort.

Snorkel No. 404 . . . 3 styles

SUPER-FLEXIBLE LIQUID-PROOF GLOVE: Edmont Snorkel combines almost bare hand freedom with excellent protection. Abrasion-resistant plastic coating has special finish that gives outstanding wet or dry grip. Two-piece jersey lining has wing-thumb, curved pre-flexed fingers.

FREE TEST OFFER TO LISTED FIRMS: Tell us your operation, materials handled and temperature condition. We will recommend glove and coating that best fit job and supply samples for on-the-job testing.

EDMONT MANUFACTURING COMPANY

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Edmont

(For details, use Key # N-8 on card on page 1)

impression: that for the individual employee, safety is as much an integral part of his job as production."

The Marrero plant recently was cited by the Metropolitan New Orleans Safety Council "for outstanding safety achievements for 1956–57" for the fifth consecutive year.

• • •

The Knolls Atomic Power Laboratory, operated by the General Electric Company for the Atomic Energy Commission, has been awarded the AEC's top safety award for completing more than three million man-hours of work during 1956 and 1957 without a disabling injury.

The AEC "Award of Honor" was presented by Jon D. Anderson, manager of the AEC's Schenectady operations office, to Frederick E. Crever, KAPL general manager. KAPL earlier was awarded the National Safety Council "Green Cross" safety award and the AEC "Award of Merit."

In the entire history of the laboratory, no KAPL employee ever has received an injury due to radiation.

KAPL scientists and engineers designed and built the nuclear propulsion system for the Navy submarine Seawolf. Currently they are designing a two-reactor propulsion system for the world's largest submarine, the Triton, and are designing a nuclear propulsion system for a destroyer.

• • •

Shop 67, the Electronics Shop, at Mare Island Naval Shipyard, Vallejo, California, has compiled a remarkable work safety record. Over the past nine years, with employment varying between three and six hundred persons over ten million manhours have been worked without the occurrence of a single disabling injury. The work involved maintenance, repair, trouble shooting, overhaul and testing of all types of high voltage electronics equipment. It was performed both in the shop and aboard ship, where conditions are extremely hazardous.

In appreciation of this fine record the Navy Yard Association of Mare Island sponsored a Noon-hour party for the entire shop. A suitably inscribed plaque was presented to the shop and refreshments were served. The Shipyard Commander, Rear Admiral M. J. Lawrence, USN, and other Shipyard officials attended and offered their congratulations.

The ten million manhours was completed in mid-October and the record continues. The Safety Division at Mare Island believes that the ten million manhours worked without a disabling injury is a record for this type of work both in the Navy and in private industry and would be interested to learn of any record which exceeds this one.

• • •

The National Safety Council's highest award for industrial safety will be presented to the Chemstrand Corporation's Research and Development Division for its record of four years and over three million man-hours free of disabling injuries. It is the second Award of Honor to be earned by Chemstrand employees. The Pensacola, Fla., nylon plant holds the world's textile plant safety record with some 17 million man-hours free of lost-time injuries.

The last lost-time injury recorded at the Chemstrand Research Center was December 16, 1953. The three million man-hours record was reached December 8. There are nearly 500 men and women employed in the Center. Dr. Frank Soday, Research Director, said all credit should go to the "safety teamwork" of research personnel. He cited specifically leadership exerted by David B. Renegar, safety section head for the Chemstrand Decatur facilities, and William T. Crabtree, research administrative department head who gives direct supervision to Center safety programs.

• • •

The Casper W. Haines General Agency, for the New England Mutual Life Insurance Co., has presented an award for safety to Bernard and Isadore Fineman, executives of the Ferry Mfg. Co., Inc., of Philadelphia. The award was created to "encourage greater safety in industry and the home." The Fineman brothers were cited for developing an electrical extension cord in an easy-to-see red color which lessens the chances of tripping and causing personal injury.

• • •

Connecticut Commissioner of Labor Renato E. Ricciuti has presented the employees of the Glenville mill of the American Felt Co. with a plaque which commemorates their achievement in working 1,093,678 man hours over a period of more than 17 months—from April 8, 1956 to September 19, 1957—without a disabling injury. The award of merit, which is in recognition of the accident prevention record of the employees, was given by the Liberty Mutual Insurance Company.

"I wish to offer my personal and official congratulations to the management and workers of this organization," Commissioner Ricciuti said. "You have not only achieved a record for yourselves but have provided an example by which others can take encouragement in the campaign to make industrial Connecticut a safe place in which to work."

• • •

Quick-thinking action which prevented a possible traffic disaster won Walter Brockmeier of Jennings, Mo., the Allied Van Lines Driver-of-the-Month award for September, according to safety director John H. Waspi. Brockmeier drives for Prossers Moving & Storage Co., Allied mover in St. Louis.

The motor of his tractor burst into flames while driver Brockmeier was pulling up a steep hill in a congested section of St. Louis. He immediately stopped the truck and blocked the rear wheels. Then, because it was impossible to open the hood, he crawled under the tractor and extinguished the fire from beneath. This disregard for his own safety undoubtedly saved the lives of both pedestrians and drivers in the vicinity of the burning vehicle.

Second and third-place winners for September are Walter Nelson of Rapid Moving Company, Jacksonville, Fla., and Harvey Tippett of Weissberger Moving Company, New York City.

First prize winners receive a trophy and become eligible for Allied's Driver-of-the-Year award, a two-week, all-expense paid vacation. Certificates are awarded to drivers placing second and third.

Robert W. Jennings of Hampton, Virginia, has been named Allied Van Lines' Driver-of-the-Month for October because of his outstanding courtesy on the road, safety director John H. Waspi has announced. Jennings drives for Henderson Van & Storage Company, Allied mover in Newport News.

A truck driver for 15 years, 32-year-old Jennings has aided several motorists who have been involved in passenger car accidents. On different occasions he has taken uninjured survivors to nearby towns for help, has pulled stranded cars out of ditches or snow banks, and changed tires for lone women drivers.

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WAGNER ENDURONAMEL* CHANGEABLE COPY BOARD

. . . the most potent media for use in safety promotion. Copy can be changed in a matter of minutes. The intriguing constant newness of the messages is the secret of the success of this forceful device. No other promotion gets such outstanding results. No permanent type sign begins to approach it. A "Mechanical Hand" permits change of copy without the use of ladders.

Act today and see how quickly you get actual results—how quickly you improve your safety record. Use the coupon now to get literature.

Shown is one of the installations for Commonwealth Edison Co., Chicago, made by C. J. Electric Co.

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PLEASE SEND A WAGNER SAFETY MANUAL.

NAME (Title) .....
COMPANY .....
STREET .....
CITY & STATE .....

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(For details, use Key # N-9 on card on page 1)

TV Keeps an Eye on Atom Operations

Television is keeping a watchful eye on atomic energy operations in radio-active areas where no man can safely work unprotected.

General Electric's Technical Products Department at Syracuse, N. Y., manufacturer of industrial television systems, reports that several leading atomic energy installations in the country are using television for observing operations in radio-active areas.

Varied Uses

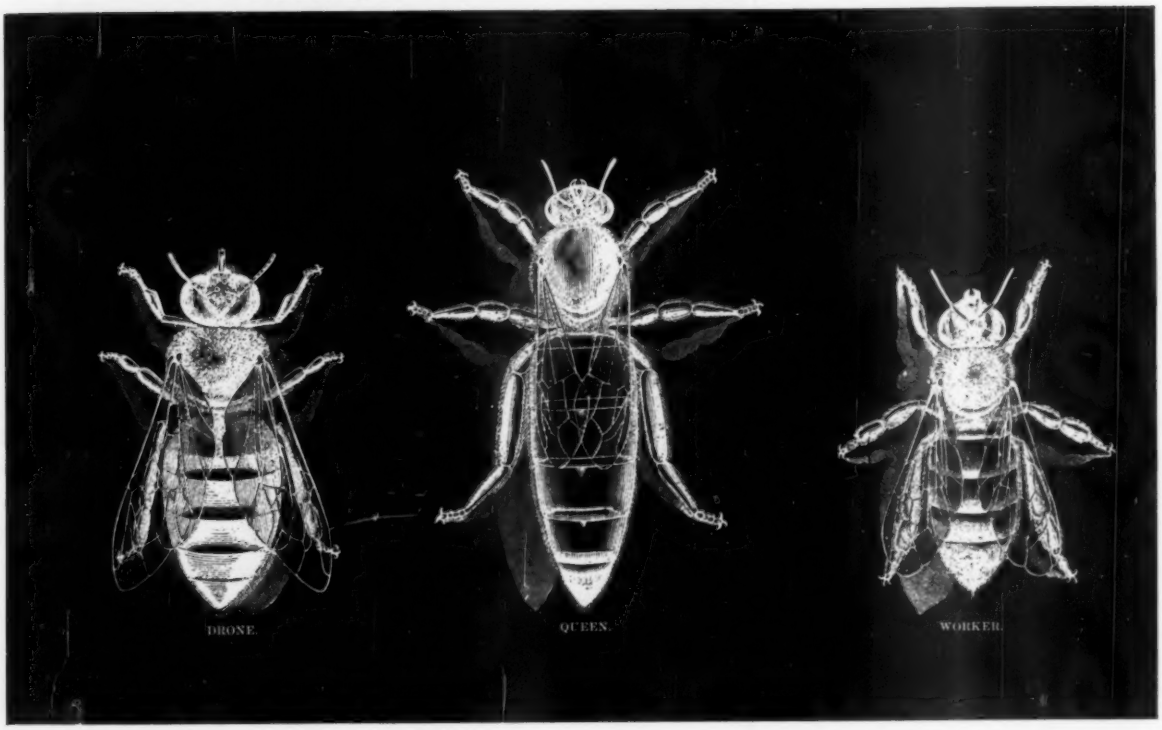
Some of the uses include searching for water leaks, checking counter scales, checking refueling of reactors, remote maintenance, watching underwater discharge and checking diffusion patterns.

Reactor Servicing

At Idaho Falls, Idaho, General Electric is using a three-dimensional color system to aid in the remote servicing of reactors used in development of a nuclear aircraft propulsion system, while at the Hanford atomic plant in Richland, Wash., television is used for examining the rear face of an operating nuclear reactor. At the Vallecitos Atomic Laboratory, Pleasanton, Calif., a television system is used to read instruments inside a reactor enclosure.

In applying the television systems in radio-active areas, the camera is usually enclosed in an air-tight housing to eliminate radio-active dust. A non-browning glass is put in the housing and a non-browning lens is used on the camera.

DOES A HONEYBEE HAVE AN ANSWER TO CANCER?



Mouse and man, worm and wasp, pig and protozoa—these are some of the twenty-eight living things used in the American Cancer Society's nation-wide research program.

Scientists rely most – in 189 projects – on man; next comes the mouse – in 139 studies – and there is even a honeybee helping one scientist in his search for facts that may save the quarter of a million Americans now dying each year of cancer.

Many organisms. Many laboratories. Many hundreds of scientists. Together they make up a balanced program of research with freedom and flexibility, reaching across the country and across scientific disciplines, to tap the best minds and the best ideas.

From these twenty-eight organisms science is getting facts that may save more lives tomorrow. But what of today? What of you?

With early diagnosis, half of those with cancer can now be cured if treated promptly. If you have cancer, you may well be saved – but only if you give your doctor a chance. Go to him for an annual health checkup . . . not because you feel ill, but because you feel good and want to stay that way.

The worm and the wasp, the pig and the protozoa will provide the answers for tomorrow: for today, see your family doctor.

AMERICAN CANCER SOCIETY

industrial hygiene

New Safety Data Sheet on Hydrofluoric Acid

Publication of a revised safety data sheet on hydrofluoric acid (SD-25) has been announced by the Manufacturing Chemists' Association, Inc. The 46-page booklet is part of a continuing MCA series of safety data sheets. It includes 12 illustrations and special, detailed instructions pertaining to the handling and emptying of cylinders and tank cars containing hydrofluoric acid.

In addition, there are sections on hazards, engineering controls, employee safety, tank and equipment maintenance, waste disposal, medical management and first aid.

Copies of Chemical Safety Data Sheet SD-25, Hydrofluoric Acid, may be obtained at 50 cents each from the Manufacturing Chemists' Association, Inc., 1625 Eye Street, Northwest, Washington 6, D. C.

Alcoholism A Safety Hazard

It would be profitable for industry to watch its alcoholic citizens, notes a prominent insurance surgeon. An estimated three percent of the country's population are problem drinkers—with 1,860,000 of these engaged in industry.

"There is no place in modern industry for excessive drinking as present day factory work requires a clear mind and a steady hand," says Dr. N. Gillmor Long, chief surgeon of Lumbermens Mutual Casualty Company and American Motorists Insurance Company, divisions of the Kemper Insurance group. Failure to tighten bolts or efficiently check the work of others can result in loss of life or serious disability.

"Alcoholism in industry can be broken down to three categories," says Dr. Long. "These are (1) excessive drinkers, (2) reactor drinkers (the individuals who use excess drinking as a futile means of ducking responsibility or home problems) and (3) psychotic drinkers."

Established programs to combat the problem should have the full endorsement of industry. As in absenteeism cases, the chronic drinker, whose work is affected by alcoholism, should be sorted out and referred to proper professional help.

"Correction of the mental or psychic stress involved," Dr. Long concludes, "can go a long way toward correction of alcoholism, which is not only an expensive outlet in industry, but also a dangerous one."

New Radiation Calibration

In a joint statement, the National Bureau of Standards in Washington, D. C., and the National Research Council of Canada announced a change, which took effect January 1, 1958, in the basis for instrument calibrations in roentgens in the energy region from 0.5 to 3 Mev. The change was due to a revised estimate, based on improved data, of the "stopping power" corrections that must be applied to the materials involved in the calibration procedure.

Affecting instruments that measure radiation exposure dose, the new calibration base results in a small change in the calibration factor for radiation in the indicated higher-energy range. Thus, to conform to the new basis, instruments calibrated in roentgens with cobalt-60 gamma rays prior to January 1, 1958 should have their calibration factors reduced by 1.8 percent; and those whose scales were calibrated prior to that date should have their scale readings changed in the same way—i. e., multipled by 0.982.

Basis for Revision

As indicated in the joint statement, recent experimental studies gave results that disagree somewhat with the values calculated by the method hitherto in use. The revised calibration base was adopted after careful analysis of these laboratory studies which were carried out by the National Research Council (Canada), the National Bureau of Standards, and others.

how is your working environment?

Take a second look at your ventilating, air conditioning, lighting, dust collecting and locker-room facilities. Time and money spent on an industrial sanitation program will be returned many times in lower costs of production and improved employee morale.

by **BURTON VAN DYKE**
Staff Engineer
Plant Facility Engineering Unit
American Radiator & Standard Sanitary Corp.

The sanitary problems of heavy industry are mostly problems at separate plant locations. Sanitary programs are usually not carried beyond manufacturing operations as are the programs of the food and drug industries. However, the very nature of many heavy industrial manufacturing operations presents sizable and unusual industrial sanitation problems.

Most industry today operates in a very competitive market. Everywhere efforts are being made to lower production costs and maintain product quality by increasing labor productivity. This can be done by mechanizing production facilities. Mechanization or automation, if you prefer the term, does reduce manpower requirements. However, dependable and skilled performances from every man working on an automated production line is essential for successful operation.

The key to economical production is the skilled, dependable, contented employee. Unfortunately this kind of employee is getting harder and harder for certain heavy industries to attract and to hold. The reason such people are hard to attract is not the pay scale; the reason in many cases is a poor working environment.

Many examples from many industries could be given to illustrate poor working conditions. Let's take one: the working environment in an older plant producing enameled cast iron bathtubs. The foundry in such a plant is very dirty. The casting cleaning operation is extremely noisy. The enameling operation is very hot. In addition such a plant has serious overall problems of safety, housekeeping, and health.

Industry today turns to the field of industrial sanitation to improve and maintain employee morale and to keep the worker as comfortable and as safe as possible. We will see many industrial sanitation programs enlarged as well as new programs established in the near future.

Three things are necessary for a good industrial sanitation program. They are (1) Top Management Recognition (2) Proper Facilities (3) Continuous Program Effort.

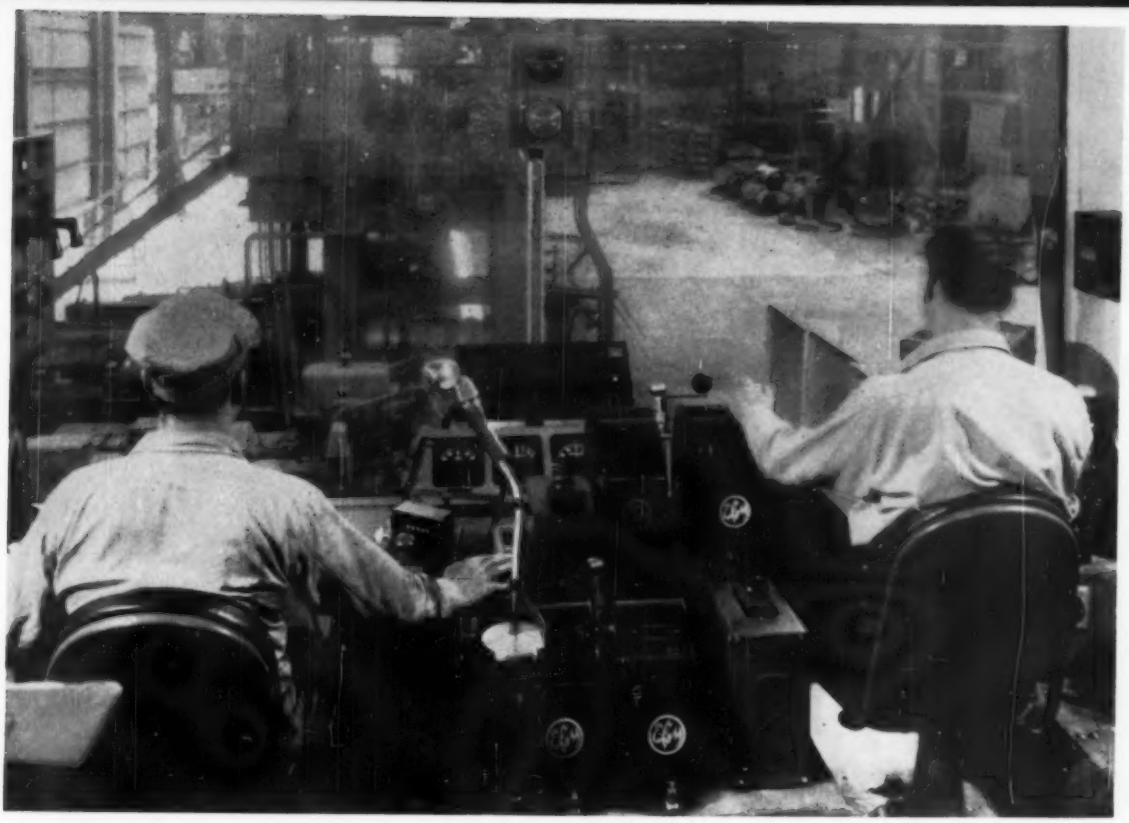
Top Management Recognition

It is very important that top management not only understand the function of industrial sanitation but that they select capable supervisors for any program. A good supervisor is essential to an efficient and economical industrial sanitation program, because of the many widespread activities.

Proper Facilities

As has been said many times: The key to proper facilities is planning. Provisions for industrial sanitation must start with plant design. An engineering approach to the problems of employee facilities is just as essential as it is to production layout.

In addition to plant and employee service facilities, heavy industry offers many problems in heating, ventilating, air conditioning, and lighting. Keeping work areas comfortable and safe sometimes requires extensive dust collection and air handling systems. Proper



lighting is also very important in reducing fatigue, preventing injuries, improving quality, and reducing losses.

One of the most important employee facilities in any plant is the locker room. The employee's first and last contact with the plant every day is the locker room and its sanitary facilities. Here he gets a good or bad impression daily that directly effects his morale. It is very important that first class facilities be furnished and kept in excellent condition. Improvements in equipment, materials, lighting, and ventilating practices in recent years have raised industrial locker room facilities to a level that was reserved for public buildings and first class hotels a few years ago.

The best plant and employee facilities are frequently the cheapest in the long run. It is necessary to look at overall economy as well as first cost when planning such facilities. Industry over the years has learned to build with maintenance in mind; industry should also build with industrial sanitation in mind.

Continuous Program Effort

After management understands the importance of an industrial sanitation program some work is required to set up a good program. There is no such thing as a typical organization chart that will work in all sizes and types of plants. The industrial sanitation function is so interrelated with other plant functions that proper organization and individual job responsibilities must be worked out on an individual plant basis.

For an example, safety is one of the most important aspects of industrial management. Also, everyone agrees that good housekeeping is a contributor to industrial accident prevention as well as a necessary ingredient of an industrial maintenance program. Success of a plant fire prevention program also depends very much on good housekeeping. Actual plant cleaning operations are related to plant engineering, health, personnel, and public relations functions.

The important thing to remember is that any good industrial sanitation program requires day-to-day effort as well as continuous methods improvement. Spasmodic efforts will not get the job done.

The above has been only an outline of working environment problems of heavy industry and an industrial sanitation program to cope with the problems. Now for some specific examples to illustrate environment problems and how they effect the worker and production. The following programs have been undertaken in recent years by only one branch of heavy industry—in this case, the plumbing fixture manufacturing plants of our company.

1. In 1949 American-Standard purchased a large war surplus plant in New Orleans and converted it to the production of vitreous china plumbing fixtures. 140,000 sq. ft. in this 600,000 sq. ft. plant is used for the Cast Shop. This is the critical manufacturing area of the plant where liquid slip is poured into molds. The rate of drying of both clay and molds is very important. This drying depends on relative atmospheric humidity. In the humid New Orleans climate, if the Cast Shop were operated at the most desirable level of relative humidity for manufacturing, the dry bulb temperature would often be over 100°.

The solution to this problem was the installation of one of the world's largest industrial air conditioning systems. This system holds dry bulb temperature in

(Continued on page 40)

Pesticides Can Be "Humanicides"

"Today chemicals for pest control are widely used in agriculture, industry, public health and the home," says Bernard E. Conley, Ph.D., Chicago, secretary of the American Medical Association's Committees on Pesticides and on Toxicology in a recent article in the "A. M. A. Journal," reviewed in "Safety Standards," published by the U. S. Department of Labor's Bureau of Labor Standards.

Case History

The foreman of a British plant nursery was a careful man. His associates said he was very nervous about insecticides, wore protective clothing and appeared to observe all the precautions recommended for the use of pesticides.

In January 1955 he complained of headaches and of pain and weakness in his legs. He was admitted to the hospital where his headaches were attributed to chemicals used in his work and the leg pains to rheumatism. After discharge, he still complained and was readmitted to the hospital. By July he was dead.

The coroner's jury found that ethylmercury phosphate, used for the treatment of plant-root disease, was responsible for the foreman's death. Acting on the jury's findings, the British Ministry of Agriculture considered the case prima facie evidence of hazard from organic mercury compounds to workers in enclosed spaces and changed its regulations accordingly.

Not always recognized as important causes of poisoning, "pesticide preparations are being used in the United States in about 80,000 formulations with over 200 basic chemicals," the Journal states.

The basic compounds vary in their capacity to produce injury. The accompanying table compares the safety of 81 common pesticides. Stars mark the compounds from which fatalities have been reported.

"The degree of risk involved in the usual or customary use of pesticides depends on a variety of factors other than the intrinsic toxicity of the chemical. The form (liquid, gas) and formulation (oil solution, wettable powder) of the product; its method of application (mist or coarse spray); frequency, amount, and duration of exposure; and other circumstances of use all influence the degree of risk," Dr. Conley says.

In general, "poisoning may occur both from single exposures to appreciable amounts of a pesticidal agent and from frequent, successive exposures to small quantities. The use of preparations containing solvents and wettable agents in the formulation or of finely dispersed preparations and the presence of oil or grease on the skin facilitates absorption of the toxic products into the body.

"Application under confined conditions such as in an unventilated room or lack of suitable protective equipment when the preparation is handled for prolonged periods or is in concentrated form also reduce the safety with which pesticides may be employed."

Where Injuries Occur

"Injury from pesticides may arise from several sources: in agriculture, during application to crops or during the harvesting of crops; in industry, during the

Comparison of Safety of Pesticides

Low risk	*Moderate risk*	*High risk*
Insecticides		
allethrin	aldrin	demeton (Systox)*
derris *	BHC *	hydrogen cyanide *
methoxychlor	calcium arsenate *	Metacide *
p-dichlorobenzene	chlordane *	methyl bromide *
Perthane	chlorothion	nicotine *
propellant (freon)	DDT *	parathion *
Pyrethrum *	diazinon	paris green *
synergists	dieldrin	schradan (OMPA)
	diptherex	TEPP *
	endrin *	
	lead arsenate *	
	Lethanes *	
	lindane *	
	melathion	
	metaldehyde *	
	naphthelene *	
	pentachlorophenal *	
	silicofluorides (sodium, mercury)*	
	sodium fluoride *	
	solvents (kerosene and others)*	
	Thanite	
	toxaphene *	
Rodenticides		
Fumarin	alpha-naphthyl-thiourea-(ANTU)	arsenious acid *
Pival	barium carbonate *	castrix *
red squill	zinc phosphide	phosphorous (yellow)*
Tomarin		sodium fluoroacetate *
warfarin		strychnine *
		thallium *
Fungicides		
Bordeaux mixture	dichlone	alkyl mercury salts *
captan	dichloroethyl ether *	mercuric chloride *
chloranil	lime-sulfur *	phenyl mercury salts
copper carbonate	nabam	
ferbam	pentachlorophenol *	
glyodin	thiram	
maneb		
sulfur		
zineb		
ziram		
Herbicides		
2, 4-D *	fuel oils *	dinitro-o-cresol *
endothal	sodium borate *	sodium arsenate *
maleic hydrazide	sodium chlorate *	sodium arsenite *
monuron, diuron (chlorophenyl dimethylureas)	sodium trichloroacetate	sulfuric acid *

* *Compounds from which fatalities have been reported.*

when you are at work
Don't eat or smoke
Don't take off your gloves clothes, or respirator
GET AWAY WHILE I'M SPRAYING!
I wont take 'em off!
THE POISON WILL GET ON YOUR HANDS AND FACE OR IN YOUR MOUTH AND MAKE YOU SICK OR KILL YOU!
EVEN IF YOU ARE WORKING IN THE HOT SUN DONT TAKE OFF YOUR CLOTHES OR EQUIPMENT. IF YOU DO YOU MAY BE POISONED!

If you get SPRAY on your clothes DO THIS AT ONCE!!
1 STOP WORK AND GET OUT OF THE AREA
2 TAKE OFF YOUR CLOTHES!
3 TAKE A SHOWER AND WASH SKIN THOROUGHLY!
4 WASH YOUR CLOTHES!

BURN OR BURY ALL CONTAINERS!
BURN BAGS! BUT DON'T STAND IN THE SMOKE. THE SMOKE CAN POISON YOU!
BURY CANS!
IF YOU FEEL SICK TELL THE BOSS!
I feel sick
OLD POISON CONTAINERS ARE DANGEROUS
DON'T LET CHILDREN OR ANIMALS NEAR THEM!
AND GET TO A DOCTOR RIGHT AWAY

AFTER WORK
1 TAKE OFF YOUR CLOTHES
2 WASH WITH PLENTY OF SOAP AND WATER
3 WASH YOUR WORK CLOTHES
4 GO HOME IN CLEAN CLOTHES
NEVER SLEEP IN A ROOM WHERE POISONS ARE STORED!
POISONS ARE IN THE AIR EVEN THOUGH YOU DO NOT SEE THEM!

manufacture or formulation of products; in public health work for the control of nuisance or disease-carrying insects; or in and around the home."

In the home, injury may result directly from use of the pesticide or indirectly from "excessive residues on food or excessive atmospheric concentrations during crop dusting and community fogging operations."

Although injuries have been reported in all these areas, Dr. Conley cited typical cases like the group poisoning of some 30 workers recently in Venezuela. They were spraying wettable powder formulations of dieldrin. The most seriously affected went into convulsions and exhibited other symptoms not unlike those by workers in a formulating plant who were exposed to aldrin, chlordane, and dieldrin.

"Poisoning by excessive residues of pesticides on crops is uncommon but not unknown. Recently, a small epidemic (10 cases) of acute nicotine poisoning occurred after the patients ingested mustard greens that had been heavily treated once and shipped to a metropolitan market the day after being harvested. From 25 to 50 times the allowable limit (tolerance) of residue was found on the crops after analysis. Recent reports have been made of cases of injury with similar circumstances, associated with toxaphene, parathion, DDT, and arsenic."

Systemic poisoning through skin absorption of parathion deposits on plants have been reported among workers in orchards, vineyards, and hop fields. Cases of chronic arsenic poisoning have also been reported among weed-pullers from contact with sheep-dip residues, in fruit wipers, and in others.

How Many Injuries Occur

It has been very difficult to determine just how many deaths and injuries result from pesticides. Statistics are scanty and misleading—contributing to the misconception that such injuries are rare. Mortality tables on accidental poisoning give no detailed information on the chemicals causing fatalities, except for a few familiar industrial and medicinal chemicals. Most compounds are classed as "other and unspecified."

The National Office of Vital Statistics reviewed the substances hidden under this heading and revealed that pesticide products cause from 100 to 150 deaths a year or from 6 to 10 percent of the fatalities associated with accidental poisoning by liquid and solid substances. These findings coincide with regional surveys on nonfatal poisonings conducted by the American Academy of Pediatrics, the American Red Cross, and various poison control centers. Furthermore death totals from the older pesticides remain remarkably constant year after year.

There is no single panacea for controlling pesticide poisoning. The problem is complex but Dr. Conley says, "It is generally agreed that increasing the public awareness of safety, increasing the use of precautionary labeling, and improving the accuracy of statistics would go far in controlling the incidence of unintentional intoxication."

The scientist discusses the "ticklish problem" of increasing public awareness of safety without scaring people away from the use of pesticides. "Yet, we must

advise users about the dangers . . . if we are to improve the safety record . . . this is the price we must pay to educate the public."

"Precautionary labeling is an important weapon in the drive to increase the awareness of safety. Pesticides used in agriculture are subject to registration and labeling when they are sold in interstate commerce and within 39 states. Seven states have no law, and two states have regulations that pertain to one product only. In three other states, the regulations do not apply to household and industrial pesticide products."

The "doctor's dilemma" in recognizing and establishing intoxication from pesticides in states with inadequate or no regulations is vividly illustrated in a letter from a southwestern physician. Suspecting an insecticide pad as the cause of a poisoning case, he found that it was sold door to door and could be purchased through a telephone number listed on the pad —a number that soon became "nonoperating." Neither the Better Business Bureau, the local health, pure food and drug, nor Agriculture Department had information or jurisdiction over the vendor. The state has no laws controlling sales of such products.

The AMA Pesticides Committee analyzed the pad and found it contained p-dichlorobenzene. The committee then recommended that copies of this report be sent to all interested health and regulatory bodies.

For the benefit of workers engaged in spraying crops, the California Department of Industrial Relations has a picture story on the hazards and means of control. Explaining that the California law requires employers to provide safe working conditions and all necessary safety equipment and workers to obey safety rules, the Department cites disabling injuries to over 1,000 persons from spray poisons in a recent 4-year period.

But "poison sprays can be used safely if you know how," the Department says. "If you are doing any crop spray work, remember sprays poison and kill bugs—and they can poison you too! Sprays can damage your skin, your lungs, your stomach, and other organs." The accompanying illustrations from the California publication explain how sprays can harm you and what you should do to protect yourself.

"Read the label on the container!" is another admonition. Some sprays, like nicotine, TEPP, and parathion are more dangerous than others. "Don't spray if the weather is too windy or blustery! It is dangerous to spray into the wind, for the wind can blow the spray on you and poison you!"

California crop sprayers are warned that "dangerous jobs require special clothing." Like baseball catchers, football players, or deep-sea divers, crop-spray workers should wear their protective clothing. These include gloves and respirator. The latter should be kept clean, have its cartridges changed at least once a day and its filters and pads changed often.

And finally the doctor warns, "Just because you don't feel the effect of small doses, don't think everything is all right! Repeated doses of some of these poisons may accumulate until one more small dose may harm you seriously."

Photograph by courtesy of Mine Safety Appliances Co. Drawings from California Dept. of Industrial Relations through U. S. Dept. of Labor's "Safety Standards."

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(For details, use Key # N-11 on card on page 1)

New Facts on Smog

New knowledge of the chemistry of smog, plus new mechanical devices for controlling automobile exhaust gases, may be used to cut air pollution in metropolitan centers, according to an expert in the field speaking in New York recently. Mr. W. L. Faith, managing director of the Air Pollution Foundation, San Marino, California, made his remarks at the Annual Meeting of The American Society of Mechanical Engineers at the Hotel Statler.

Experts now agree, said Mr. Faith, that two groups of ingredients in exhaust gas are the villains of much smog, including that in Los Angeles. The two ingredients when exposed to sunlight, react with each other to produce the eye-burning, sky-filling smog for which Southern California is famous.

The two ingredients, unburned hydrocarbons and oxides of nitrogen, are only a small percentage of all automobile exhaust, but when 6,000,000 gallons of gasoline are burned each day, as in Los Angeles, producing 60,000,000,000 cubic feet of exhaust, enough are generated to fill the atmosphere.

Reductions of Hydrocarbons

Since both ingredients are necessary to form smog, said Mr. Faith, the obvious way to solve the problem is to eliminate one or the other. To date, most work has been aimed at reducing the hydrocarbons, either by burning them more completely in the engine or by removing them from the exhaust system.

Approaches to more complete burning include several mechanical devices that control the flow of gasoline and air more precisely. In addition, attempts have been made to use liquid or solid filters that would remove the unwanted gases from the exhaust system, or to work out a system of burning them after they leave the engine but before they enter the atmosphere.

Although some progress has been made, no really satisfactory system has yet been found, said Mr. Faith.

On the second branch of the problem, reducing the oxides of nitrogen, little work has been done. An attempt has been made to use activated carbon as a catalyst that would cause the nitric oxide to break down into nitrogen and carbon dioxide, but the catalyst itself is burned by the hot gases. Another proposal, to inject quantities of water into the engine cylinders, thereby cutting formation of nitric oxides, has not yet been proven feasible.

"At this stage of development," concluded Mr. Faith, "no proposed solution to the auto exhaust problem can be completely discarded, but indications are that burning exhaust hydrocarbons after they leave the engine, or removal of nitric oxide in the exhaust system are the best bets. Engineers would do well to try to adapt these methods to solution of the problem. In the meantime, 2,500,000 cars in Los Angeles alone await an effective, yet economic, exhaust-control device."

Copies of Mr. Faith's paper, No. 57-A-245, may be purchased at 50¢ from the ASME Order Dept., 29 West 39th Street, New York 18, New York.

Employee Health Study

Du Pont's 90,000 employees are healthier than the national average, a four-year study disclosed today. Now the Du Pont Medical Division is trying to find the reason for this by study and analysis of the medical records of a hundred thousand employees, past and present. Specifically, efforts are under way to find if apparently healthy people give off signals, unknown to doctors today, of illness yet to come. Should this prove to be the case, preventive medicine would take a long step forward.

The Medical Division has for 40 years maintained health records on the company's thousands of employees, including the results of annual physical examinations for all of them. The result is a compendium of medical facts that is very nearly unique in that it represents a wide cross-section of people, the great majority in good health. Most medical records, compiled by doctors or hospitals, list only the facts about people who were sick or injured.

The death rate among the concern's employees was only about 68 percent of the national norm. The Medical Division has undertaken a comprehensive program of statistical research to pinpoint the reasons for this, hoping to discover new medical knowledge which will lead to a healthier world.

For every category of illness, the death rate among the company's men and women is lower than the national rates (the statisticians say it is enough lower to be statistically significant). Deaths from heart attacks were 91 percent of the national average, from cancers 86 percent—and from diabetes, only eight percent. Others range between those points.

Heart Statistics

More Du Pont people have heart attacks in summer than in winter. This is contrary to other studies which report a higher incidence in winter months. They also found that hypertension is no greater among executives than among wage roll people, contrary to general belief.

Another phase of the study shows that the rate of heart attacks for "normal" employees is about 2.3 per 1,000 people. For overweight people the rate is about 50 percent higher and for those with hypertension it is about 70 percent more. But for people who have both, the risk of heart attack jumped to three and one-half times.

Working Environment

(from page 35)

the Cast Shop under 87° and can remove 18 tons of water from the air per day. The air conditioning system includes 3 large wells, water absorption equipment, mechanical refrigeration, 6 large blowers, and a complete supply and exhaust duct system for the entire 140,000 sq. ft. Cast Shop.

The initial cost and operating costs of such a system are high. However, production losses have been very low because of temperature and humidity control, together with good working conditions. This system has been so successful that similar air conditioning installations are being considered for existing vitreous china plumbing fixture plants in northern sections of the country.

2. As an example of extreme heat in an industrial environment, consider the enameling of a cast iron bathtub. The tub is heated to red heat in a furnace and then is removed and placed in an enameling fixture in front of the furnace. A skilled enameler then stands over the tub and sifts on dry enamel powder. The enameler must stand very close to the tub for proper application of enamel. The radiant heat on the enameler is terrific. Enameling is done in a large building with many furnaces side by side. The entire building atmosphere becomes hot from the large heat input and everyone working in the building is subjected to excessive heat.

Up to a few years ago, no overall solution to this problem had been discovered. The problem became more and more serious as labor turnover and production losses increased. Finally, a special type of air cooling system was developed to modify the entire enamel shop working environment.

Mechanical refrigeration was out of the question because of the large heat gain from furnaces and hot tubs. However, we found that temperature in the entire shop could be lowered a significant amount by introducing an extremely large amount of cooled outside air into the building, passing this air once past work stations and then exhausting the air to outside. This cooling system consisted of large blowers, oil bath air filters, capillary air coolers, and extensive duct work for air distribution.

The air cooling systems are very expensive but results from present enamel shop operations have justified this expenditure. One sign of success is the many complaints we get when cooling units are shut down for maintenance for only a few minutes.

3. There are dust collection problems in almost every plant. By designing dust collection equipment in connection with heating and ventilation requirements some significant improvements can be made in the work environment. For example, our company is now building a modern foundry in Louisville that will cost about $8 million for both building and equipment. Dust collection, heating, and ventilating systems for the new foundry will cost over $500,000. This shows the size of some of the industrial environment problems.

Many other items and examples could be discussed at length. Not only is the industrial sanitation field broad but no two industries have the same problems. In fact no two plants in the same industry have exactly the same problems. But it can be said of industry in general that the **time and money spent on an industrial sanitation program will be returned many times in lower costs of production and improved employee morale.**

From an address presented at the Sanitation Maintenance Show & Conference.

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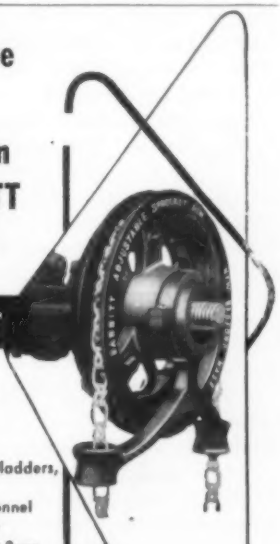

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(For details, use Key # N-13 on card on page 1)

Two Safety Guides

Two titles have been added to the growing list of industrial safety manuals and guidebooks published by the Accident Prevention Department of the Association of Casualty and Surety Companies.

The "Power Line Safety Manual" is a major addition to the documented safety materials available to utility companies. It deals with that area of utility company work which, as the manual points out, is responsible for nearly two-thirds of all fatal accidents in the electric light and power industry.

The illustrated, easily read booklet is divided into seven sections, dealing in turn with: Equipment; Starting the Job; Personal Conduct; Fire Protection; Procedures; Explosives, and First Aid. The material is so organized and presented as to make the manual ideal for use as a principal or supplementary safety teaching aid in job training programs. This copyrighted publication is available at cost from the Association.

The second booklet, "Your Guide to the Safe Use of Powder-Actuated Tools," is the fifty-seventh in a series of guidebooks published by the Association each of which discusses the hazards inherent in some professions, procedure or piece of equipment and which sets forth rules for the safe elimination or circumlocution of those hazards.

The two-color, pocket-sized booklet is full of short, practical safety maxims grouped under such headings as handling, loading, firing, testing safety devices, extension and guards. Because of their convenient size and their approach to the subject, the books in this series have proved popular with employees and are being successfully used in scores of businesses and industries as educational devices for beginning and experienced workers alike.

"Your Guide to the Safe Use of Powder-Actuated Tools" is available only through member companies of the Association and their agents. Information on the "Power Line Safety Manual" can be obtained through these same sources or by writing directly to Accident Prevention Department, Association of Casualty and Surety Companies, 60 John Street, New York 38, New York.

Utility Property Lighting

A new guide on the lighting of electric utility properties has been published by the Illuminating Engineering Society in the 16-page booklet, "Lighting Outdoor Locations of Central Station Properties." This is the third in a series of such booklets covering various aspects of utility property lighting which have been prepared by the I.E.S. Committee on Lighting of Central Station Properties. Another, covering indoor locations, will be published later.

Seeing Tasks Analyzed

As explained in the foreword of "Lighting Outdoor Locations of Central Station Properties," the variety of seeing problems and conditions encountered in generating and substation areas is not typical of work areas in general. The new report is fully illustrated with charts and diagrams as well as photographs of many typical installations. It first analyzes the various seeing tasks involved and covers general applications, describing and explaining each. One diagrammatic page is devoted to outline drawings of typical equipment showing photometric designations and distribution characteristics. Table II lists recommended levels of illumination for a number of areas within generating or substation properties. Another section concerns electrical distribution and control.

"Lighting Outdoor Locations of Central Station Properties" will be of special interest to those concerned with lighting of properties within electric utilities themselves. Individual copies are 50¢ and may be obtained from Publications Office, Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y. If quantities are required for staff or other purposes, bulk prices will be quoted upon request.

Metal Grating Code

The first all-inclusive technical publication to represent a product standardization in the metal grating industry has been published by the Metal Grating Institute, Inc., Pittsburgh, Pa. This two-color "Metal Grating Handbook" contains 32 pages of informative text, schematic drawings,tables, and actual installation photographs as well as complete standards and specifications. It also contains a glossary of terms and definitions used throughout the metal grating industry.

This new Handbook will find wide application in a variety of industries by those who specify, buy, or use metal grating and treads. Although metal grating is almost universal in application and use, the new publication establishes much-needed standards and specifications for design and usage in this industry. It is not a manufacturers' catalog but rather a technical guide prepared by the industry itself.

The recent publication of this Handbook climaxes three years of

exhaustive testing, research, coordination, and standardization by member-companies of the Metal Grating Institute, Inc. As partial compensation the Institute has priced the "Metal Grating Handbook" at $1.00 per copy. For single or quantity copies contact: Metal Grating Institute, Inc., One Gateway Center, Pittsburgh 22, Pa.

Industrial Trucks

Said to be the most complete and authoritative handbook ever developed on the subject of industrial trucks has just been published by the Industrial Truck Association, Washington, D. C. Appropriately entitled "The Handbook of Powered Industrial Trucks," the 96-page publication is the result of nearly three years' effort on the part of various Association committees. It is divided into five convenient sections: industrial truck applications; cost savings through industrial truck handling; planning for and selection of industrial trucks; industrial truck engineering data; and industrial trucks and the future.

Case Histories

The publication has been designed to answer the needs of purchasing, operating, production, maintenance and material handling personnel in all industries. It contains dozens of case studies showing specific industrial truck applications, as well as nearly two hundred illustrations of various truck types, attachments, containers and load carrying devices. In addition, numerous engineering tables, graphs and charts are used to present practical truck operating data.

One section is devoted to proper selection of trucks; other material has been developed to aid a company in driver training and proper preventive maintenance programs and procedures. All types of motive power are detailed with information included on selection of the best type of power according to the operations required.

Copies of the handbook may be obtained from the Industrial Truck Association, Ninth and F Streets, Washington 4, D. C. Cost per copy is $5.00.

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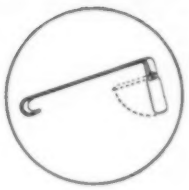
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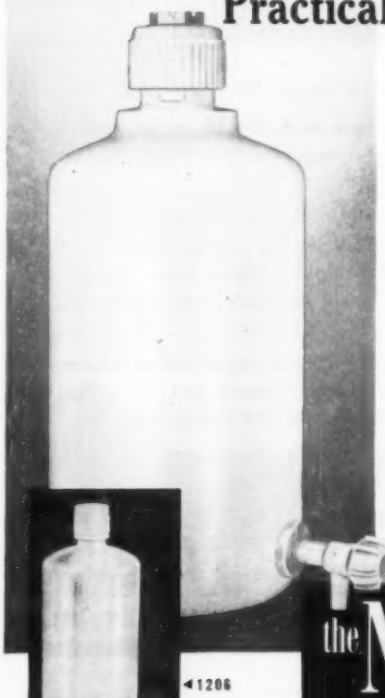

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Porcelain Enamel Weather Resistance

"**Fifteen Year Exposure Test of Porcelain Enamels,**" is the title of a new booklet by Dwight G. Moore and William N. Harrison, National Bureau of Standards Building Materials and Structures Report 148, 13 pages, 15 cents. (Order from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.)

The Bureau has been testing weather resistance of porcelain enamels by exposing a large number of samples to four climatic conditions, representative of different parts of the eastern United States. Results of the study should be useful to enamel manufacturers in further improving the weather resistance of porcelain enamels and to architects and engineers in specifying the best weather-resistant compositions.

Large variations were found in the weather resistance of the various enamel types investigated. The enamels affected least by the exposure were those having high resistance to acid attack. The most resistant enamels retained more than 90% of their initial gloss and showed insignificant color changes (less than 1 NBS unit) while some of the enamels of poor acid resistance (which were not of a type recommended for outside exposure) changed from full gloss to a dull finish in 15 years.

Among the recommendations based upon the findings of this investigation, the one that may prove to be of greatest usefulness for specification purposes states that, for architectural installations where general appearance, absence of fading, and ease of cleaning are important, only those enamels having class A or class AA acid resistance by the standard citric acid spot test should be used. In addition, for enamels containing the cadmium-selenium-sulphur pigment (red, orange, and yellow), only those compositions should be selected that will give a weight loss of less than 1.0 mg/cm^2 when subjected to a boiling solution of 10 percent nitric acid for 2½ hours.

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(For details, use Key # N-16 on card on page 1)

How to Stop Fires

The scheduling of Fire Prevention Week last fall prompted the Fire Equipment Manufacturers' Association, Inc., to note that it is just as essential that fire department organizations in plants, institutions, etc., be charged with the prevention of fires as it is for them to be proficient in extinguishing fires after they have started. The officers and members of fire brigades should familiarize themselves with the various fire hazards throughout the plant and see that they are protected in accordance with standards. Carefulness and good housekeeping are two essential features in fire prevention.

THE FIRE FRONT

Standpipe Safety Code

A new Safety Code covering "Inspection, Maintenance and Protection of Standpipe and Inside Hose Systems" is available without cost from the Fire Equipment Manufacturers' Association, Inc., One Gateway Center, Pittsburgh 22, Pennsylvania. The new literature is based on the belief that a standpipe and hose system is one of the most important and effective means of fire protection within buildings, since it furnishes the only reliable means of obtaining effective fire streams in the fastest time, particularly at the upper stories of multistory buildings.

This Safety Code reviews the various services performed by a standpipe and inside hose system. Specific guidance is provided for periodic inspection of all components in the system. Instructions for maintenance of hose, couplings, nozzles, and playpipes, are concise. The publication is printed in an 8-page booklet that is punched for 3-ring binder insertion.

November Fire Losses On Downgrade

Estimated fire losses in the United States during November amounted to $75,321,000, the National Board of Fire Underwriters has reported. This loss represents a decrease of 6.4 percent from losses of $80,481,000 reported for November, 1956, and a decrease of 3.1 percent from losses of $77,753,000 for October (1957).

Losses for the first 11 months of 1957 now total $931,671,000 an increase of 4.4 percent over the first 11 months of 1956, when they amounted to $892,805,000. These estimated losses include an allowance for uninsured and unreported losses.

Industrial Chiefs Take Brush-Up Course

Nineteen fire chiefs from Kimberly-Clark Corporation mills all over the United States and Canada recently put in a full day of brush-up training in fire fighting on the test field of Ansul Chemical Company.

The training was part of a four-day meeting of the fire chiefs which began at Kimberly-Clark's home office in Neenah, Wisconsin. The meeting marked the first time the fire chiefs had ever met and the first time that the company had sponsored such a get-together for a group of hourly employees. Every one of the chiefs from mills as far-flung as Fullerton, California, to Niagara Falls, Ontario, was able to attend.

According to Gene Birchler, Kimberly-Clark Fire Protection engineer, the four-day session included discussions on fire brigades, mill problems, fire insurance, fire hazards, fire prevention promotion and visits to neighboring K-C mills.

New Standard for Small Tank Cleaning

A new NFPA Standard on Procedures for Cleaning or Safeguarding Small Tanks and Containers prior to making repairs, NFPA No. 327, has just been released by the National Fire Protection Association. This standard represents authoritative information as to best methods of avoiding fires and explosions when welding or doing other work on small containers. It is the result of the deliberation of several committees over a period of several years.

NFPA No. 327 was developed jointly by the Sectional Committee on Maintenance and Repair of the Committee on Flammable Liquids with Theron H. Wright of the Ohio Inspection Bureau as chairman and by the NFPA Committee on Gases of which Franklin R. Fetherston of the Compressed Gas Association and the Liquefied Petroleum Gas Association is chairman. It was reviewed by the NFPA Committee on Flammable Liquids under the chairmanship of C. H. Bunn, Jr. of Esso Research and Engineering Company. NFPA No. 327, Cleaning or Safeguarding Small Tanks and Containers, 12 pages, 40 cents.

Gas Fires Under 3%

Less than three percent of U. S. building fires during 1956 were attributed to gas and gas appliances, the American Gas Association reports after reviewing annual estimates of the National Fire Protection Association. The nation's building fires mounted to a total of 824,400, with gas as the listed cause of 21,000.

Losses in building fires were estimated at $1,016,000,000 by the NFPA in an eight-page article in its Quarterly, published in October. Reprints of the copyrighted article are being made available in pamphlet form from the Association, 60 Batterymarch Street, Boston, Mass., at 25 cents a copy. Gas fires were charged with about two percent of total losses—an estimated $24.5 million.

Defective or overheated heating and cooking equipment of all types caused an estimated 108,500 building fires with losses of more than $92 million. Gas-fired equipment was charged with only 9,800 such fires and $12.8 million in losses. Building fires due to gas and gas appliances, including gas explosions, were estimated at 11,200 with losses of $11.7 million.

The A.G.A. pointed out that lightning alone was reported as having caused more than twice as many building fires as gas. Lightning was estimated as the cause of 45,200 fires and losses of $35.5 million, almost 50 percent greater than losses from gas fires.

Changes in Fire Truck Specifications

New Specifications for Motor Fire Apparatus, NFPA No. 19, as officially adopted by the National Fire Protection Association, the International Association of Fire Chiefs and the National Board of Fire Underwriters, have just been published by the National Fire Protection Association to supersede the previous edition dated 1955. This latest edition of NFPA No. 19 contains a number of changes from the previous edition. The most significant is the elimination of the so-called Class B pumper. Also, the present standard calls for a rated capacity of fire pumps at 150 lbs. per square inch instead of the former dual standard which recognized Class B equipment at 120 lbs. per square inch.

Developed by a representative national committee under the Chairmanship of Chief Henry G. Thomas of Hartford, Conn., these specifications, while purely advisory as far as the NFPA is concerned, are widely used as a guide by municipalities in the selection of fire apparatus. Copies of this pamphlet are available from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., at 50 cents per copy, 58 pages.

Dry Chemical Systems

Dry chemical extinguishing systems are now recognized for the first time in a new standard issued by the National Fire Protection Association as NFPA No. 17. This type of system in which a dry chemical extinguishing powder, largely bicarbonate of soda, is forced through pipes under gas pressure and discharged through orifices at a point of hazard, takes its place along with other types of special extinguishing systems previously recognized by the Association.

The new standard was prepared by a representative technical committee under the chairmanship of Mr. W. S. Marsh of the Factory Mutual Engineering Division, Norwood, Mass. It received the concurrence of the Committee on Special Extinguishing Methods under the chairmanship of Mr. A. L. Cobb of the Eastman Kodak Company and was passed upon by the NFPA annual meeting and by the Board of Directors.

The Standard for Dry Chemical Extinguishing Systems must be based upon special engineering considerations in the design of the system. It accordingly includes a detailed appendix providing data suitable for design purposes. Copies of the standard are available for 50 cents from the NFPA, 60 Batterymarch St., Boston 10, Mass.

A CASE HISTORY *from our files . . .*

The Safety Director of a large Eastern distillery had recommended installation of Carpenter Automatic Emergency Lights. Procrastination was responsible for delaying purchase for several weeks, with the result that a simple blown fuse caught everyone unprepared.

During a night shift, lighting circuits to the Bottling Department went dead, while the machinery, fed by high-voltage lines, kept clanking on. In the resulting panic, women stumbled into the racing machines. Exit stairwells were darkened, too, and falls added to the toll. Only chance prevented loss of life.

Within days, the management installed Carpenter Automatic Lights throughout this plant and eight others.

The tragedy in this instance was the delay after the hazard had been recognized, and proper protection decided upon . . . For just one WATCHMASTER AUTOMATALITE would have prevented the misfortune. Each AUTOMATALITE now stands as a mute yet tangible symbol of the need for immediate protection.

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EXCLUSIVE • Powerful, sealed-beam floodlights with strong center punch to illuminate long aisles and pin-point exits or critical stations, etc.

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CARPENTER MFG. COMPANY

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(For details, use Key # N-17 on card on page 1)

Thirty-five seconds after ignition, this 3-foot square of alcohol triggered the fire detection installation in test.

Detector Catches Up with Fire in 35 Seconds

A public test of its newly-installed fire detection system was held in late November at the plant of Screen Products Company, Inc., Caldwell, New Jersey.

To test the system, which operates on a pneumatic principle that automatically triggers an alarm at the first sign of unusual heat, Mr. Raymond H. Just, president of Screen Products and head of the Caldwell Township Manufacturers' Association, ignited a standard Underwriters' Laboratories pan of alcohol. The resulting heat actuated an alarm connected directly to Caldwell Township Fire Headquarters.

A crew of firemen under the direction of Mr. Pasquale Pollio, Caldwell fire chief, was at the scene in a matter of minutes and extinguished the blaze. Elapsed time between the ignition of the fire and its extinguishment was 7 minutes.

The system, whereby a municipal fire department can monitor and receive alarms automatically, clearly demonstrated that it cuts fire losses to a minimum through early detection.

Here the fire alarm consultant explains the operation of the new detection equipment to the president of the plant.

Pictures by courtesy of J. H. Scharff, Inc., subs. of Walter Kidde & Co., Inc.

Fire Truck Beats Below Zero Conditions

Sputnik has nothing on a remote Arctic mining and fishing village; it has its own "flying fire truck." At least that is what the Indians and Eskimos of Yellowknife, N. W. Territory, call their handsome new fire engine, believed to be the first ever delivered to a community by air.

Yellowknife officials decided to have the fire truck driven from Montreal, where it was purchased, to Hay River, at the edge of Great Slave Lake. From there, it was planned to load it aboard a ferry boat and transport it by water to Yellowknife, but after the 3,500-mile trip from Montreal to the lake, it was found that an early freeze had made the ferry journey impossible. The lake at some points already was frozen to a depth of one foot.

Rather than let the fire truck sit at the lake edge until the spring thaw, it was decided to try what some considered the impossible—load the 13,000-pound vehicle in a transport plane and fly it the remaining 200 air miles to Yellowknife. In addition to the problem of weight, there was a small matter of size to worry about. The 6½-ton vehicle, capable of pumping 750 gallons of water per minute, was more than 24 feet long and almost 8 feet high. By removing such items as the siren, and side steps, the wheels, rear fenders, overhead ladder brackets, suction hose brackets and troughs and axe brackets, the big pumper was just "squeezed" aboard a twin-engine Bristol transport plane.

The fire truck weathered its unusual air journey without a scratch, and the whole town turned out to welcome its new "flying fire truck." It was unloaded and the dismantled equipment was replaced in a record 12 hours. After appropriate shakedown tests, the new fire engine was proudly commissioned into service in Yellowknife's ten-man volunteer fire department.

Eskimos and Indians have been journeying here from miles around to inspect and admire the new pumper, which is kept in a specially heated fire house to protect it from the frigid winter weather.

Cold Weather Operation

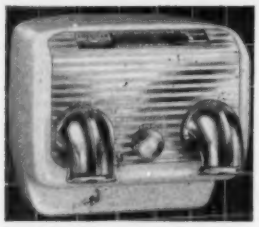
To assure operation of the pumper during Yellowknife's 65 below weather, the manufacturer's engineers wrapped the exhaust pipes and passed both under the pump itself. They were then joined together to a 3¼-inch stainless steel pipe running through the entire length of the booster tank. The capacity of this tank is 500 gallons.

The engineers also installed a pan underneath the pump. This was done to keep as much heat as possible in the lower part of the pump compartment. As an additional warmth measure, two gasoline heaters were installed, one on each side of the pump compartment. These heaters were equipped with deflector plates and the entire compartment was enclosed.

Tests made later in Yellowknife in sub-zero weather showed the special heating equipment fully effective in preventing the pumping apparatus from freezing.

Picture by courtesy of Mack Trucks, Inc.

DON'T INSTALL ELECTRIC HAND American Dryers



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(For details, use Key # N-26 on card on page 1)

These roofing rolls of flame-resistant vapor barrier film are a few of the thousands which will provide protection for the 34-acre roof of the new Chrysler plant in Ohio.

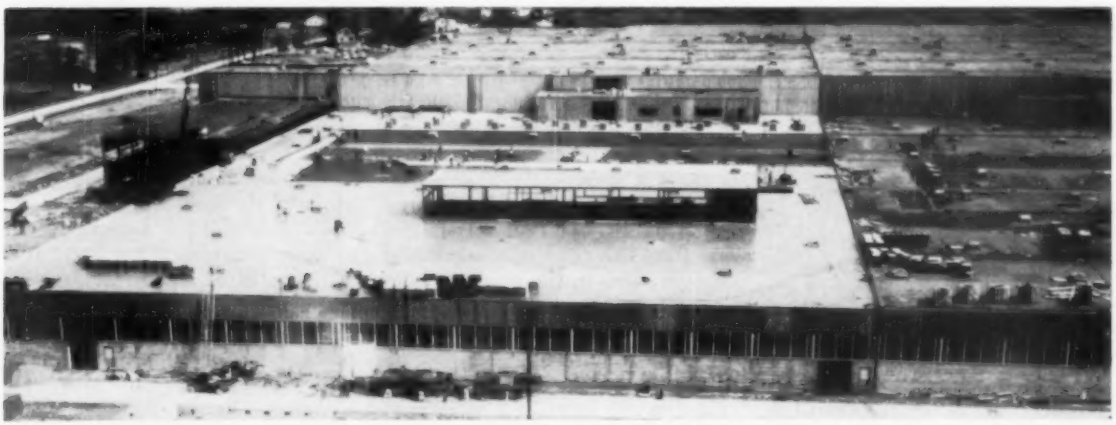
FIRE RETARDANT ROOF CONSTRUCTION

Thirty-four acres of roofing that "will not feed or spread a fire" protect Chrysler Corporation's giant new stamping plant in Twinsburg, Ohio. The fire-retardant roofing consists of a flame-resistant plastic vapor barrier and a non-flammable adhesive.

Installation of the roofing at the sprawling 1,400,000 square foot Chrysler plant was completed recently by Industrial Roofing and Sheet Metal, Inc., Cleveland. The firm completed the job with a 60-man crew in less than six months.

The complete roof consists of a steel roof deck, the fire-retardant vapor barrier, board roof insulation and a 4-ply tar and gravel built-up roof. The construction eliminates flammable asphaltic materials from between the roof deck and insulation.

Factory Mutual Laboratories in Norwood, Mass. proved in fire tests that asphaltic materials used between a metal roof deck and insulation let go combustible gases. These gases are forced down under pressure through the roof, where they ignite and spread fire. Preventing this reaction is one of the purposes of the new construction which, tests show, will not feed or spread a fire and will eliminate



Protected by the newly developed fire-retardant roofing, no inch of this extensive roof will feed or spread a blaze.

the usual dense black smoke that accompanies a building fire and makes fire-fighting difficult.

As a result of the tests, Factory Mutual has awarded this type of roofing a Class I rating. The roofing system has received Factory Insurance Association approval as well.

The plastic vapor-barrier material also protects the insulated built-up roof from the damage of moisture migration. Without the protection of the vapor barrier sheeting, water vapors, prompted by warmer inside and colder outside temperatures, can penetrate the insulated, built-up roof, causing extensive damage.

Pictures by courtesy of Lexsuco, Inc., and B. F. Goodrich Industrial Products Co.

When Were Your Extinguishers Checked Last?

In an effort to alert the public on the importance of portable fire extinguisher maintenance, the Fire Equipment Manufacturer's Association, Inc., emphasizes that extinguishers should be examined periodically to make sure they have not been tampered with or moved from designated places. They should always be in full working order, ready for instant use. Recharging of extinguishers should be done under capable supervision. The date of recharging and signature of the person who performed it should be put on the tag attached to each extinguisher.

Symposium on High Voltage Safety

Some of this country's and Canada's leading electrical safety experts are taking part in an all-day symposium on the safe use of higher voltages in homes, schools and commercial buildings during the Winter General Meeting of the American Institute of Electrical Engineers at the Hotel Statler in New York Feb. 2–7.

The symposium, titled Safety Considerations in the Proposed Use of Higher Secondary and Utilization Voltages, is being held Thursday, Feb. 6, with Arthur E. Pringle, vice president, Pringle Electric Manufacturing Company, Philadelphia, as moderator.

Subjects to be discussed will include: the National Electric Code, industrial and commercial buildings, relative shock hazard, European practices, air conditioning, Canadian wiring systems and appliances, motors, commercial structures, Canadian utilities, electrical inspection, Underwriter Laboratories requirements, major appliances, utility distribution, space heating, Army and Navy installations, lighting sources and panelboards.

Trade Injuries Higher than Manufacturing

The injury rate for trade workers in 1956 was fractionally higher than that for manufacturing, the U. S. Department of Labor said. This shift in the traditional relationship of injury rates for these two industry divisions, first apparent in 1955, reflects the declining trend in manufacturing injuries rather than a rise in the trade injury experience.

For wholesale and retail trade, the average rate was 12.5 disabling injuries per million man-hours worked in 1956, essentially unchanged from 12.3 in 1950, according to reports compiled by the Department's Bureau of Labor Statistics. In contrast, the all-manufacturing rate of 12.0 for 1956 was 23 percent lower than that for 1950.

Injury rates for the various segments of trade varied widely, ranging from 3.9 for retail apparel and accessory store employees to 25.3 for workers in lumber and building materials firms. The long-term stability of injury occurrence observed in the all-trade rate was also apparent in the trade subgroups. For 6 of the 9 subgroups, the 1956 injury-frequency rate differed less than a full point from the corresponding rate for 1950. The only significant changes were in the rates for lumber and building material dealers, which fell from 29.1 in 1950 to 25.3 in 1956, and for wholesale and retail dairy products firms, where the rate dropped from 26.9 in 1950 to 21.1 in 1956.

Driver Training School Gets Permanent Home

The North Carolina State College Truck Driver Training School now has a permanent home in Raleigh. The area, 50,000 square feet, is enclosed and sub-surfaced for the school's students to use while learning their basic truck operational skills such as starting, stopping, forward and backing exercises, serpentine maneuvering, overhead clearance estimation, and parking.

New Equipment

Along with establishing its permanent residence, the school has received or will receive in the near future several new pieces of equipment. The Mack Company has already donated a new Diesel truck. The White Motor Company will soon deliver its latest cab-over Diesel truck, and both General Motors Company and Trailmobile have made similar promises of their latest truck and trailer equipment.

These contributions along with the improved facilities will greatly assist the nationally-known, college-conducted school with its task of training professional truck drivers, according to a statement by Edward W. Ruggles, director of the State College Extension Division.

Sling Safety Film

"Take-It-Away" is a new motion picture film released by Macwhyte Company, Kenosha, Wisconsin. An educational picture, the film traces the history of slings and shows various types in action. The film explains how the rated capacity of a sling will vary due to stresses caused by the various methods of applying the sling to the load. Film is 700 feet and has a running time of approximately 20 minutes. It is a 16mm black and white motion picture production with sound. The only cost involved is the return postage, Express Prepaid. For reservations: write to—Macwhyte Company, Public Relations Manager, Kenosha, Wisconsin.

WHAT'S THE LAW?

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

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Chairman, Committee on Workmen's
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. . . . . , Newark, N. J.

SAFE PLACE TO WORK—Employer's Duty to Provide Non-Slip Surface on Loading Platform

An employee, injured while a frequenter of employer's premises, was not entitled to compensation where the employee slipped on a metal sheet which was placed on the employer's loading platform in a location where it was normally placed when not in use and which was so known to the employee. The evidence revealed that the loading platform was so constructed as to conform to the safe-place statute and was kept as free from obstruction and substance as the employer's business would reasonably permit. The court held that the safe-place statute did not make an employer the insurer of the safety of a frequenter. Affirmed.

Paluch v. Baldwin Plywood & Veneer Company; Supreme Court of Wisconsin. No. 4. October 8, 1957.

PASSIVE NEGLIGENCE—Action Not Barred by Employee Against Third Party

An employee, injured in the course of his employment when a crane operated by his employer came into contact with high tension wires owned and controlled by a power company, received compensation. He also filed an independent action against the power company as permitted by statute. The power company filed a third party complaint against the employer seeking indemnification, claiming its own liability could be grounded only upon passive negligence and that employer's active negligence was the primary cause of the employee's injury. The court held that there is no contribution among joint tortfeasors and that passive negligence is limited to liability which is imposed by statute or because of his legal relationship to the actual wrongdoer. Third party complaint barred. Affirmed.

Detroit Edison Co. v. Price Brothers Co.; United States Court of Appeals, Sixth Circuit. Appeal from the United States District Court, Eastern District, Southern Division Michigan, No. 13, 073. October 31, 1957.

LUNCH HOUR INJURY—Employer's Premises

An employee who slipped and fell forward while descending the stairs in the employer's building after punching her timecard and eating in the employer's lunchroom was properly entitled to compensation as the injuries sustained arose out of and in the course of her employment. The record showed that the employee was engaged to do typing and filing work. She was allowed an hour each day for lunch and was at liberty to eat where she pleased, including the employer's lunchroom on the third floor of the employer's building. On the day of the accident the employee punched out for lunch, proceeded to the third floor lunchroom, ate lunch and started down the stairway toward the street intending to pay a bill (in a nearby office building) prior to returning to work. The court ruled that it was the court's duty in compensation cases to effectuate the legislative intent and that the employment is not limited by the exact time when the workman reaches the scene of his labor and begins it, nor when he ceases, but includes a reasonable time, space, and opportunity before and after, while he is at or near his place of employment. Affirmed.

Dyer v. Sears, Roebuck & Company; Michigan Supreme Court. October 7, 1957.

Road Accident Costs? $7 Billion in 1957!

The nation was handed its 1957 traffic bill recently by Thomas N. Boate, manager of the Accident Prevention Department of the Association of Casualty and Surety Companies, and it came to a staggering grand total of $7,255,600,000!

That is the estimated cost of a single year's traffic mayhem based on figures for the first nine months of last year and a projection through December 31. It is the highest figure in the history of the automobile.

"The pro rata share borne by each of the nation's 171,790,000 citizens amounts to $42.23," Mr. Boate said, "while the cost for a family of four is $168.92. Included in the sum are charges for property damage, automobile repair, legal and medical fees, insurance expenses and loss of income through absence from work."

He added that in amassing this bill the nation's traffic losses will reach an estimated total of 38,300 deaths, 1,856,000 injuries and 11,700,000 accidents.

While deaths will be below the all-time high set in 1956, accidents and injuries, like the dollars cost, are continuing their steady climb and will reach new high levels. Mr. Boate said that this steady increase in the total traffic casualty experience exposes the error of measuring highway safety progress solely on traffic death figures.

As for the $42.23 "bills" charged up to every man, woman and child in the country, Mr. Boate said that they can be marked paid since the cost of accidents is met on a pay-as-you-go basis. However, he pointed out that this is small consolation since, as matters stand, every citizen can count on his share of this economic waste to increase each year for the rest of his life.

Maintenance Vehicle for Mackinac Bridge

With the opening of the magnificent new 5-mile-long Mackinac Bridge across the Straits of Mackinac, one of the country's most versatile vehicles went into service.

It is the Mackinac Bridge Authority's specially-designed emergency and service truck, a service unit for bridge-light replacement and similar tasks, a chemical-equipped fire-fighting truck, a tow truck and wrecker with 15-ton pulling capacity, a first aid and rescue truck.

It will perform all of these—and possibly other—emergency and service tasks on the bridge which extends from St. Ignace on the north to Mackinaw City on the south, connecting two sections of Michigan where ferry service formerly was the only means of crossing. The emergency truck has constant power-proportioned drive to all four wheels for top performance under any snow, ice, rain, or other circumstances on the bridge, which has a 3 percent grade to its highest point 199 feet above the water.

The truck has a gasoline engine and standard five-speed transmission with a top speed of 55 miles an hour. Its latest-style wide-cab design, with cab-over-engine styling, provides maximum chassis space for equipment compartments, hydraulic platform mounting, and double boom derrick behind the cab while keeping vehicle length to a 139-inch wheelbase that allows easy maneuverability on the bridge.

The truck must be able to cope with situations in either of the 23-foot double lanes of the bridge and has sufficient underbody clearance to negotiate a 2-foot-wide raised center mall if necessary.

Two-way radio keeps the emergency and service vehicle, two bridge patrol cars, and the Mackinac Bridge Authority's communications center at St. Ignace constantly in contact, ready to meet any difficulty which may develop.

With a suspended span of 8,614 feet, the new bridge is the world's largest single suspension span, surpassing even the Golden Gate Bridge with its 6,450-foot suspension length. Just keeping the lights of this and the steel trussed sections

and approaches of the Mackinac Bridge in working order represents a major assignment for the new emergency and service vehicle.

For this purpose, the truck has a three-section, hydraulically-operated aerial platform which elevates to 30 feet and can be rotated a full 360 degrees from the platform itself. It also can be raised or lowered by persons on the platform or by an operator in the truck cab. The 9 by 4 foot platform will safely support 600 pounds on its outer end and is insulated for 50,000 volts dry flashover.

Firefighting phase of the new vehicle's equipment includes two 30-pound dry chemical units, two 20-pound carbon dioxide extinguishers, and a 2½-gallon water extinguisher, all hand-operated, portable equipment. Water extinguishing permits wetting down fires in seat cushions, luggage, etc. A 1,000-pound capacity dry chemical unit, with two 50-foot lengths of one inch hose, one on each side of the truck, and dual stream nozzles, is mounted permanently in the body of the truck.

Six various-sized body compartments house these firefighting units as well as portable oxygen and acetylene cutting equipment, portable 1,000-watt generator, sabre cutting saw, asbestos suit with special helmet, gloves, and shoes, first aid kit, stretcher, and blankets. Cutting equipment is for emergency car accident use and the generator permits extra lighting as well as sabre saw cutting when fumes prevent use of torches.

Wrecker facilities include double boom derrick mounted at the rear, each boom with 90-degree side-swinging 6-ton lift capacity. The truck has outrigger legs for use of booms at the sides. With its 15-ton pulling capacity and boom design, the truck is capable of removing stalled vehicles from the bridge in a matter of minutes. Equipment also includes a portable compressed air tank for inflating tires.

Vehicle design includes double-decked bumper with four hardwood cushions for pushing stalled vehicles,towing eyes front and rear, 100-ampere alternator, twin spotlights, 360-degree red flashers front and rear, and two rear flashers.

Picture by courtesy of Four Wheel Drive Co.

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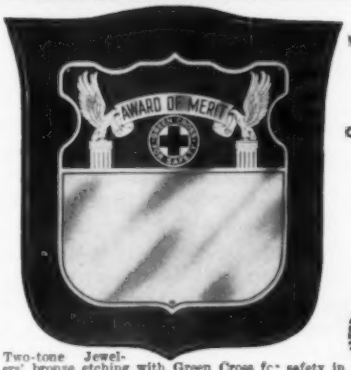

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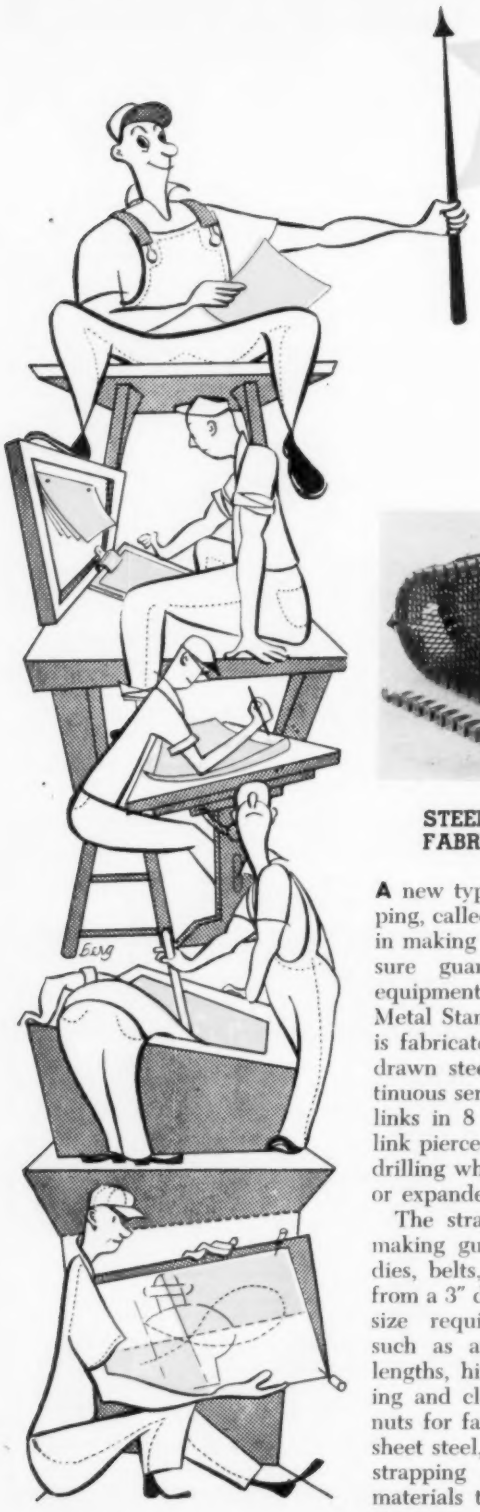
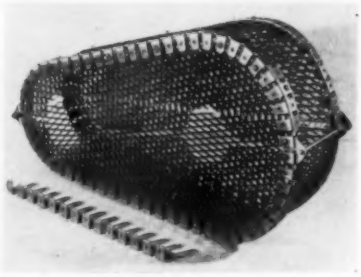


MACHINE GUARD SERIES
other articles Dec. & Jan.



STEEL STRAPPING FOR FABRICATING GUARDS

A new type of flexible steel strapping, called "Acroflex", can be used in making a wide variety of enclosure guards for machines and equipment. Made by the Acro Metal Stamping Co., the strapping is fabricated from 14 guage deep-drawn steel. It consists of a continuous series of angular connected links in 8 foot lengths, with each link pierced by a hole to eliminate drilling when used with wire mesh or expanded metal guard material.

The strapping can be used for making guards for punch presses, dies, belts, etc. It can be formed from a 3" diameter circle up to any size required. Accessory items, such as angles for long straight lengths, hinges to allow for opening and closing of guards, tapped nuts for fastening to wire mesh or sheet steel, are also available. The strapping is also made in other materials than steel where special circumstances require resistance to chemicals and corrosion.

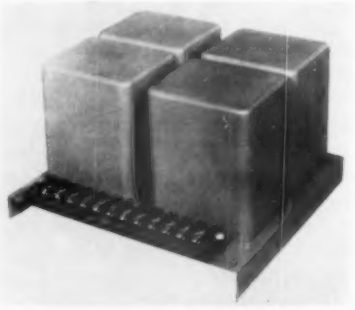
For details, use **Key # MG-1** on Inquiry Card on page 1.

NEW USES FOR GUIDE PIN COVERS

A new concept in design and use for Elasticone Guide Pin Covers has been recently developed by the manufacturer, Central Safety Equipment Co. Offered as protective coverings for shop equipment and manufactured products, Elasticones are said to increase production time and product efficiency.

The units are spirally wound cones of flat ribbon steel, manufactured in a wide range of sizes to fit over and protect pins, bushings, shafts, lead screws, hydraulic shafts, guide pins and many others. Actual shop tests have shown Elasticones installed over the exposed parts have reduced breakage, lubrication problems and shutdown time. Complete information on applications for both shop equipment and finished products are contained in new bulletin.

For details, use **Key # MG-2** on Inquiry Card on page 1.



NON-WEAR ANTI-REPEAT CONTROL

An anti-repeat press control with no moving parts, for use with its Type "PV" protector air valve, has been announced by the Clark Controller Company. Instead of relays, the device utilizes magnetic amplifiers, diodes, a transistor, and a pulse

transformer. Therefore it has no moving parts to require inspection and maintenance, and is not subject to wear, corrosion, and dust interference.

The "Transmag" control has external connections essentially like those of conventional anti-repeat press controls, and operates on 115-v ac power. It receives input signals from the press "run", "stop", and "inch" buttons and the press limit switches, and delivers its output to the magnet of the Type "PV" air valve. Essentially a safety device interposed between the operators' control buttons and the press, it prevents operation of the press unless safe conditions exist. Principal safety provisions are: All "run" buttons must be depressed before a press stroke can begin and must be held down until the press downstroke is nearly completed. "Run" buttons must be released and depressed again before a new stroke can begin; if "run" buttons are taped or jammed down, the press will stop at the end of its cycle. "Run" and "stop" buttons are directly in the power circuit, on both sides of the line.

For details, use **Key # MG-3** on Inquiry Card on page 1.

MACHINE TOOL GUARD

Shown in the photo is an 8 x 10" Magnetic Grip-Shield manufactured by The Dilley Manufacturing Co., equipped with the new Giant Magnetic base which is now available for any size of this company's Magnetic Grip-Shields.

Used on lathes, millers, shapers and punch presses as well as all types of machine tools, these superpowered magnetic-based shields have more than three times the magnetic grip of the regular bases so they will stay on practically any ferrous surface of machine tools. Also shown in the photo is the new companion product the Dilley Magnetic Nozzle Holder for air hoses, coolant tubes and spray paint nozzles.

For details, use **Key # MG-4** on Inquiry Card on page 1.

CONVEYOR CATCH GUARDS

Made of wire mesh or expanded metal, Wipco conveyor catch guards materially reduce employee accident hazards and prevent damage to parts caused by falling or dropping from overhead conveyor lines, according to the manufacturer. They are adaptable to any size or shape conveyor lines. The company, Wire & Iron Products, Inc., is also a source of machine guards of all kinds, including special Wipco wire belt guards.

For details, use **Key # MG-5** on Inquiry Card on page 1.

PHOTOELECTRIC WIDE-BEAM PRESS GUARD

Production increases of up to 140% have been reported through the use of the new "Curtain of Light" press guard, developed by Electronic Control Corporation. This photoelectric guard has no dangerous gaps between individual narrow beams, because the projector throws a broad beam of light (up to 18 inches high) across the whole danger area of the press. If this light curtain is broken at any place, the press is stopped.

When the operator's hand is withdrawn to a safe position, the press can be tripped automatically. The unit permits the operator to be reaching for new stock instead of pressing the pushbuttons of conventional mechanical guards. Other features are: 1. The equipment is fail-safe. The press can operate only as long as the guard is in working order. Should any part fail, power be removed, or an attempt made to "cheat" the equipment, the press is automatically stopped. 2. It safeguards not only the press operator, but other plant personnel and visitors. 3. It has been said to raise the operator's morale, since he works without interference from obstructing guards, and to reduce fatigue.

Curtain of Light is used primarily on presses that can be stopped instantaneously, such as hydrau-

lic or friction-clutch machines. Installations include OBI's, straight side; punching, forming, welding presses; and broaching machines. It can also be used to prevent accidental tripping of mechanical "dog clutch" presses, provided they operate at 100 strokes per minute or more.

The equipment consists of a projector, a receiver, and a control unit. Housings are usually bolted directly to the frame of the press or to the floor. Shock mounts isolate the lamps and tubes from the machine's vibration. The control unit features plug-in components for easy servicing. Three models are available in curtain heights of 7, 13, and 18 inches.

For details, use **Key # MG-6** on Inquiry Card on page 1.

CHAIN SAW ATTACHMENT

A new Chain Saw Attachment for the Black & Decker #73 and #83 Saws is announced. Featuring safety and ease of handling, the Attachment fits easily into either portable electric saw, forming an integral unit for cutting timber, firewood, structural lumber, and stacked lumber, as well as for many other heavy cutting jobs.

Maximum safety is built into the Attachment, with a wide aluminum shield to fully protect the hand and other parts of the body. The saw itself has an instant release trigger switch which gives the operator split second on-off control.

For ease of handling, the Attachment and saw form a balanced unit. Besides the increased efficiency gained by minimizing operator fatigue on routine cutting jobs, this balance makes for easy handling in hard-to-get-at places such as overhead beams and joints. The unit is also excellent for deep pocket cutting, for notching, and for other jobs where a regular circular saw is limited. Large claw teeth on the front edge of the Attachment housing grip the wood being cut and enable the operator to apply a constant cutting pressure.

For details, use **Key # MG-7** on Inquiry Card on page 1.

NEW SHEAR GUARD

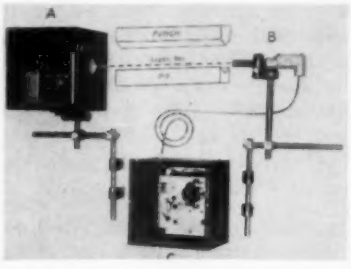
Offering increased opportunity for safeguarding workers in metal scrapping operations is a new shear machine guard developed by Guard, Inc., an affiliate of the Rock-off Produce & Salvage Co., which installed the guard first on its own equipment.

The new guard is in the form of a sheet metal barrier whose long horizontal side drops close beside the rising and falling shear blade when it is not in use. The shear operator must step lightly with the toe of his shoe on a low mounted foot treadle to start a counterweight moving down to raise the barrier. When foot pressure is removed, the barrier falls quickly into the guard position, making accidental pushing against the shear blade almost impossible.

For details, use **Key # MG-8** on Inquiry Card on page 1.

PHOTO-ELECTRIC SHEAR AND PRESS GUARD

A new approach to the guarding of metal cutting shears and press brakes has been developed by the Searjeant Metal Products Co. and is proving very satisfactory through the use of photo-electric equipment with suitable solenoid locking devices or by the use of air cylinders to pull the clutch rod. Each control consists of three parts; A—the light projector, B—the photo cell receiver or pick-up, C—the amplifier.



When the light source is aimed on the pick-up the photo crystal changes the light impulses into electrical impulses. The amplifier is tuned to receive the electrical impulses from the pick-up. Only light from the tuned light source and pick-up will operate the amplifier.

If the machine to be guarded is equipped with a stop button and can be stopped instantly at any point in the cycle the relay in the amplifier is wired in series with this button. If the machine has a friction clutch, the amplifier relay may be connected with a special solenoid operated locking device to lock the clutch pull rod and so prevent the machine from being put into motion until all hands are out of danger. Another method of using the control is to employ an air cylinder and air solenoid valve to pull the clutch rod. The machine is now operated with an electric foot switch. The amplifier relay is connected in series with the foot switch and the solenoid air valve. Any interruption of the light beam by the hands of one or more operators will instantly drop out the relay and close the air valve stopping the machine. A cam operated switch may be used to carry the press by-passing the light beam circuit should the work piece cut the beam when being formed.

For details, use **Key # MG-9** on Inquiry Card on page 1.

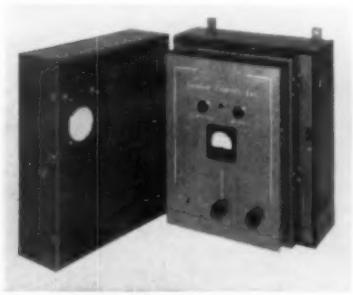
SAW SAFETY PUSHER

This is a safe feeding device that eliminates most of the dangers in operating table saws. The unit consists of a rip saw fence with a built-in pusher. There is no need

to touch the piece of stock while the saw is in use, because all feeding can be done with the knob on top of the fence.

The pusher element is made up of the knob (projecting above the fence) which is connected to a brad point (extending from the base of the safety fence) which contacts the stock for feeding and moves in a clear track. The device is called "Safety Charlie," is made of extruded aluminum by Central City Machine & Tool Co. It can be attached to all existing saw fences instantly without tools of any kind. It will feed and follow the piece through the cutting area regardless of the type of barrier used and with the operator's hands out of the danger zone.

For details, use **Key # MG-10** on Inquiry Card on page 1.

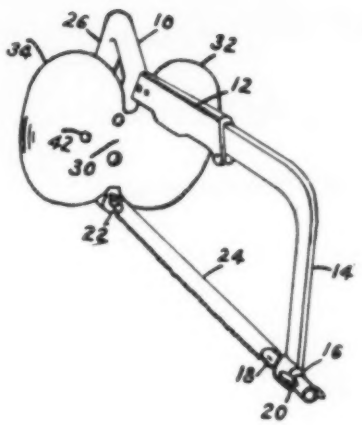


ELECTRONIC GUARD

An electronic safety control which sets up a capacitance field around the danger area of machinery so that a person, or person's hand, in this area is instantly recognized and an electrical signal sent to the machine braking mechanism. The size and shape of the safety field are determined by the positioning of the sensing element and control adjustments. The machine will not operate with a person in the field unless it is cammed out on the upstroke to increase production.

Failure of any electronic component causes the machine to stop. Tubes are readily accessible for checking, and inner chassis is removable. Cabinet is shock mounted and gasketed, and has a lock and key. Installation can be accomplished by plant personnel. Made by Security Controls, Inc.

For details, use **Key # MG-11** on Inquiry Card on page 1.



HACK SAW GUARD

This is a safety device to be used on any open type hack saw frame to protect the fingers or knuckles in case the operator saws through the material letting the fingers or knuckles strike the sharp edge. The guard also protects the fingers in case of a broken blade. Will not interfere with use of saw in close places, but will prevent injury when sawing close to wall if hand is pushed into wall. Guard can be installed or removed in 3 seconds with forefinger and thumb. Weight approximately 2¾ ounces: Size 3¾" x 3¾" x $\frac{1}{16}$" is size of contour made of pressed aluminum. Available from Floyd Swain Co.

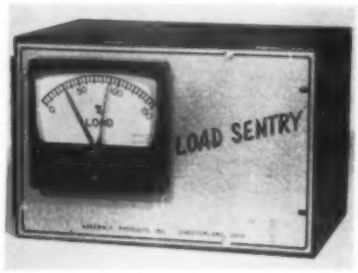
For details, use **Key # MG-12** on Inquiry Card on page 1.

NEW JOINTER GUARD

An important new safety advance, full protection with visibility for the dangerous woodworking jointer, has been developed by the Brett-Guard Company. Their new "Vu-Jointer" Safety Guard features a precision engineered standard of cast aluminum with a shield of tough Plexiglas plastic, ½" thick. The shatter-resistant, fully-transparent shield covers the jointer's rotating blades without obscuring them from the operator's view. The safety guard also functions as a work-speeding guide. Its steady, vertical holding pressure adds ease and accuracy, it is claimed.

The new tool is readily adaptable to any conventional jointer, 4" to 12" blade size. It performs with ease in a wide variety of operations: regular jointing cuts, chamferred edges, bevels, any size vertical rabbet, (even from a flat position for larger cuts).

For details, use **Key # MG-13** on Inquiry Card on page 1.



OVERLOAD GUARD

A new "fail-safe" overload control, which combines accuracy, continual indication of motor load, and adjustable load limits, has just been developed by Assembly Products, Inc. Called the "Load Sentry," the new electro-mechanical control is intended for use wherever overload of any kind may be registered on an electric motor. It is built around the positive action of a contact meter-relay, and has no electron tubes. It is easily hooked into "start-stop" switches.

The maximum load to be permitted on the motor being monitored is set by an adjustable pointer anywhere on the dial of the meter-relay. Another pointer indicates the actual running load on the motor. When the pointers meet at an overload position, contacts lock and the circuit is broken. The Load Sentry will then sound an alarm and/or shut down the system.

Two special safety features are: an interlock that keeps the circuit broken after an overload until the condition causing the trouble has been corrected and a manual reset button has been pressed to restart the motor; and the other is "fail-safe" circuitry.

For details, use **Key # MG-14** on Inquiry Card on page 1.

inside the trade

Robert G. Stuart has been appointed general sales manager of the hearing aid division of *ZENITH RADIO CORPORATION*. Announcement has been made by *William N. Brown*, division vice-president and general manager. With extensive experience in both wholesale and retail sales operations, Stuart will coordinate the activities of the hearing aid division's growing sales organization. He spent six years as sales manager with a Zenith distributor, Hollander & Company, Inc., in St. Louis, and joined Zenith in Chicago in 1953. He was instrumental in organizing the training program for radio and TV sales, and was national sale training manager.

Frank K. Platt, president of *Air Engineering Co.*, Kalamazoo, Mich., has been named to the newly-created post of central regional manager for all products of *AMERICAN AIR FILTER CO., INC.* In announcing the move *C. A. Pickett*, AAF sales manager, said that Platt has relinquished his affiliation with Air Engineering Co., and has made his new headquarters in Detroit, Mich. He was succeeded at Air Engineering Co. by *L. B. Mason*.

Appointment of *Thomas E. Walsh* as general sales manager, *PLASTOP CORP.*, is announced by *A. E. Braun*, president. In his new post, Mr. Walsh will direct sales of Plastop's complete line of construction and industrial maintenance products. A graduate of Western Reserve University, he is widely known in the construction field and formerly was sales manager of Maintenance Inc., Wooster, Ohio, for 10 years.

Clarence T. Wilson has been elected by the Board of Directors of *CORPORATE SERVICE, INC.*, Detroit, Michigan, to the office of President, filling the vacancy created by the recent death of *Frank A. Morrison*, Chairman of the Board and President.

This is not a new post for Mr. Wilson, as he was President of the Detroit concern until a year ago when he was transferred to Florida to direct activities of Corporate Group Service, Inc., of Florida, a subsidiary of the Michigan concern. Mr. Wilson formerly was on the staff of the National Safety Council. He also served as Secretary-Manager of the Greater Detroit Safety Council and the Greater Cleveland Safety Council.

HOWARD INDUSTRIES, INC., Racine, Wis., has purchased the Universal Motor Division of Westinghouse Electric Corp., in Lima, Ohio, it was announced by *Erling J. Tansen*, Howard president. The Howard company will continue servicing all Westinghouse customers who have bought universal type motors. All machinery and equipment are being moved from Lima to a recently completed 35,000 sq. ft. addition to the Racine plant.

The appointment of *R. E. Erickson Company*, 777 Summer Street, Boston, Mass., as New England sales representatives for the *BURGESS-MANNING COMPANY'S Penn Instruments Division*, has been announced by *R. A. McQuade*, Penn Instruments Sales Manager.

The Boston firm will handle sales and service in both the industrial and municipal fields for the electric and electronic flow meters and temperature and pressure recorders for utilities, water and sewage installations, industrial waste plants and general industrial use. The Ericson territory will include Maine, Vermont, New Hampshire, Massachusetts, Rhode Island and Connecticut. Mr. Ericson's brother, *Arthur A. Ericson, Jr.*, will serve as sales and service engineer for the Division in New England.

THE BRETT-GUARD COMPANY of Englewood, N. J., has announced the appointment of Safety Supply Company of Toronto as its exclusive Canadian distributor for the "see-thru" safety devices for woodworking and metal-cutting saws. The widely-known Canadian firm maintains headquarters in Toronto and branch offices throughout Canada.

A nation-wide organization of firms, including Canadian, engaged in repair of machinery and metal parts used by steel, chemical, coal, oil, marine and other heavy industries, has established its own trade group known as the American Metal Repair Association, with headquarters located in the Investment Building, Pittsburgh, Pa.

The member firms specialize in repair of steam and gas turbines and engines, diesel engines, heavy forming presses, flywheels, pressure vessels, mill roll housings, and heavy marine equipment. Some of the members engage in the cold weld process known as "metal-locking" or "metal-stitching," that originated in the Texas oil fields. Others specialize in heavy welding, location machine work and similar machinery salvage operations.

Objectives of the association are to raise the standards, promote research and enlarge the scope of its industry and to protect industrial customers of metal repair firms against unqualified operators, through a system of licensing qualified firms and their personnel.

Establishment of an Alkaline Battery Division for the production and marketing of nickel cadmium and nickel iron batteries and associated charging equipment, has been announced by *Leslie K. Gulton*, president, *GULTON INDUSTRIES, INC.*

Simultaneously, the company announced that it has been licensed to produce and market alkaline batteries in the United States, under patent rights held by SAFT-France. Gulton will take over immediately the management and operation of the Lodi, N. J., plant, formerly operated by the SAFT Corporation of America.

William P. Lowell, Jr., Sylvania Electric Products, Inc. was elected President of the RLM Standards Institute, Inc., and a member of the Board of Trustees at the annual meeting of the Institute. *J. H. Fall, III* of Benjamin Electric Mfg. Company, was elected Vice President and Trustee. *E. F. Mulligan* of Jones Metal Products Company, Treasurer, *B. G. Tremaine, Jr.*, The Miller Company, Secretary and Trustee. The Institute, which is organized to establish quality standards for industrial lighting equipment, also elected the following Trustees: *L. A. Hobbs*, Smoot-Holman Company, *E. C. Huerkamp*, Westinghouse Electric Corp., *J. F. Whitehead, Jr.*, Day-Brite Lighting, Inc., *D. E. Worrell*, Quadrangle Manufacturing Company.

PACIFIC COAST BRUSH CO. of Los Angeles, California has announced the purchase of a two story brick and concrete building located at 2030 East Seventh Street in that city. The building, which contains 45,600 square feet of floor space, will enable Pacific Coast to better serve its many distributors throughout the 11 Western States, Alaska, Western Canada and the Hawaiian Islands. The company, a subsidiary of Flour City Brush Company, Minneapolis, Minnesota is the Western Factory of the FLO-PAC

Organization. Management of Pacific Coast Brush Co., now located at 1509 Santa Fe Avenue, is by *R. B. Wadleigh,* Vice President and *Amos W. Iliff,* Treasurer and Sales Manager. *Claude R. Olson,* President, and *Robert C. Olson,* Secretary, maintain offices at the Minneapolis Plant.

Ground-breaking for a new plant in Niles, Illinois marks the most recent expansion of *REVERE ELECTRIC MFG. CO.*, manufacturers of industrial and commercial outdoor lighting equipment. The new building will contain 110,000 square feet of floor space for manufacturing, warehousing, and office space. Site of the new structure is 7420 Lehigh Avenue. Work plans call for completion by April 1, 1958.

COLUMBIA WAX COMPANY according to *C. H. Richardson,* Director of Marketing, because of the introduction of new products and the company's entrance into the floor machinery and supply field, has had to expand its plant in Glendale, California, and realign the company's sales organization. *H. N. Farthing* has been named to the newly created position of General Sales Manager of all company divisions. He was previously sales manager of the floor care products division.

Marking the entry of the Columbia Wax Company into the floor machine and equipment field, a new division, the Columbia Floor Equipment Company, has been created. The new division is the distributor for Lincoln Auto Scrubbers and floor machines and American Floor-King floor machines and Vac-King industrial vacuums in California. *C. H. Douglas,* formerly Pasadena-San Gabriel representative for Columbia, has been promoted to manager of the new division to head sales, service and parts departments. The division has established headquarters at 540 Riverdale Drive, Glendale, and will stock an extensive inventory of American-Lincoln parts and supplies.

The establishment of a Canadian Division by *WHEELABRATOR CORPORATION,* Mishawaka, Indiana, has been announced by *Otto A. Pfaff,* president. The new plant is located in Scarborough, (Metropolitan Toronto), Ontario. Wheelabrator has been active in the Canadian market for the last 12 years with sales offices located in Toronto and Montreal. Limited manufacturing of dust control equipment has been done on a sub-contracting basis.

The Scarborough plant will permit expansion and improvement of services to the rapidly growing Canadian industry. The plant will house the Canadian division sales and general offices and warehouse storage and shipping. *Robert A. Campbell,* Canadian District Manager since 1946, is General Manager of the division. The Montreal office has been expanded to include a dust and fume control engineer.

As part of a continuing program to better serve its cusomers, *BLACK MANUFACTURING COMPANY* announces the opening of a new warehouse in Kansas City, Missouri. It is expected that this facility will greatly expedite shipments of the company's electric tool products to distributors in the Midwestern United States. Black & Decker maintains two other warehouses, one in Richmond, California, and another at their plant in Hamstead, Maryland. *Thomas Neilson* has been appointed manager of the Kansas City warehouse. Mr. Neilson was assistant manager of the Company's California warehouse before his present appointment. Located at 1417 Murray Street, North Kansas City 16, Missouri, the new facility is easily accessible from the center of Kansas City and is close to truck and rail facilities. Shipments will be serviced within an area bordered by western Wisconsin, Illinois, and Kentucky, all of Arkansas, Texas, New Mexico, Colorado, Wyoming, and eastern Montana.

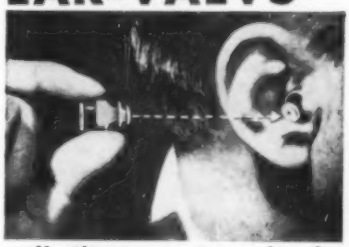
Benjamin W. Lewis, sales manager of the New York branch of Ward LaFrance Truck Corporation, has been appointed Fire Apparatus Sales Manager of the firm and will move his office to the plant and executive headquarters at Elmira, *F. N. Tracy,* president, has announced. Mr. Lewis, who has been with Ward LaFrance since February, 1941, will coordinate sales activity on fire apparatus in all territories. Ward LaFrance, a subsidiary of the Glen Alden Corporation, is one of the nation's leading manufacturers of fire fighting and special purpose vehicles for municipalities, the armed services and industry.

John M. Kane, Manager of Dust Control Products, *AMERICAN AIR FILTER CO., INC.*, has been elected President of the Board of Directors of the Occupational Health Institute of Kentucky. He succeeds James F. Bleakley, Shuler Axle Co., who remains on the Board. Other members of the Board are W. W. Stalker, James B. Lenihan, Dr. A. Lemuel Rosenblatt and James M. Graves.

The Occupational Health Institute is a non-profit organization for the advancement of health and health practices in Kentucky industry. The corporation was formed two years ago to assist industries in developing acceptable occupational health programs. New regulations and laws were adopted in 1956 which place significantly increased responsibility on the employer relative to employee health and occupational illness.

Its program consists of three categories of services—employee testing or screen-

Just a 30-Second Demonstration Will Prove Beyond Question That *Lee Sonic* EAR-VALVS



will Eliminate Entirely the Harmful Effects of NOISE to the Ear Drums. We Guarantee That! NO . . . NOT an EAR PLUG—instead, a scientifically developed sound control that **protects** the ear drums without interfering with normal conversation or sound. We'll gladly send you a pair for actual demonstration. **Then** you will find out why they are used and recommended for plant, field, and road-workers where NOISE is a HAZARD and a definite deterrent to normal production. Send for your demonstration pair of Lee Sonic EAR VALVS TODAY—No obligation.

SIGMA ENGINEERING COMPANY
1491 Vine St., Dept F-2, Los Angeles 28, Calif.
(Use Key # N-20 on Inquiry Card on page 1)

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Safe, practical attachment for Life lines. Has N. Y. State approval. Cushions the jolt of a fall. Easily secured (no knots to tie), can be moved up or down, CANNOT be accidentally dislodged from rope.

Your safety equipment dealer will give you full information . . . or write to:

ROSE MANUFACTURING CO.
Safe-Hi
DENVER
2700 W. Barberry Place

(Use Key # N-21 on Inquiry Card on page 1)

ing; health education services; and environmental health and industrial hygiene services.

The Institute's mobile health unit visits each member firm at least once a year to administer chest x-rays; vision examinations; audiogram tests for early signs of hearing loss; blood pressure, weight and height measurements; tests for anemia and diabetes, etc.

J. W. Taylor has been named southern sales representative for *IRON AGE SAFETY SHOES*, with his headquarters at 3415 Mountain Lane, Birmingham, Alabama. His territory will cover the states of Alabama, Georgia, Mississippi, and parts of Florida, Tennessee, South Carolina, Arkansas and Louisiana.

PITTSBURGH PLATE GLASS COMPANY has disclosed that it will build one of the world's largest continuous fiber glass yarn plants at Shelby, North Carolina. A multi-million dollar plant, the new unit will employ approximately 850 persons at capacity operation, according to *Robert A. McLaughlin*, general manager of the company's fiber glass division. Mr. McLaughlin said that the one-story structure will contain more than 350,000 square feet of floor space and will be completely air conditioned to insure both maximum production quality and desirable working conditions.

Election of *William A. Patterson* as president, *THE CLEVELAND LADDER CO., INC.*, Cleveland, was announced following a recent meeting of the 35-year old company's board of directors. Mr. Patterson succeeds William E. Fowler, who has retired after serving 28 years as the firm's top executive officer.

Since joining Cleveland Ladder in 1948 as general manager, Mr. Patterson has been responsible for quadrupling sales and doubling plant capacity. He previously was associated with Addressograph-Multigraph Corp., Cleveland, for 8 years. He is a past president and former trustee of the American Ladder Institute. In becoming Cleveland Ladder president, he assumes a post once held by his grandfather and company founder, F. H. Ruple.

DRAVO CORP., Pittsburgh, Pa., has announced that *The Hank Thurstin Co.*, 475 Acoma Street, Denver, Colorado, has been appointed distributor of Dravo heating equipment and Dravo grating and stair treads for a territory which includes Colorado and parts of Wyoming and New Mexico.

Safety Appointments

Four specialists of *CALLERY CHEMICAL COMPANY* have been transferred to the Company's Muskogee, Oklahoma Division, *J. S. Bardin*, division manager, announces. The four are *Oscar J. Seltzer*, safety engineer; *Stanley E. Dale*, chief process engineer; *Howard E. Harlan*, area supervisor, and *Robert L. Scholz*, project engineer.

Mr. Seltzer, who will be Muskogee Division safety engineer, served as safety officer with naval explosive plants during the war and was affiliated with chemical plants for several years before joining Callery. He received his A. B. in chemistry at University of Pennsylvania and undertook teaching and engineering courses subsequently at Temple University and Mercer College.

Jerome A. Holiber has been appointed as the new Head of the Safety Branch, Naval Research Laboratory, Washington, D.C. He was formerly with the Bureau of Ships, Navy Department, serving as Assistant to the Head of the Safety Branch. Mr. Holiber received his Bachelor of Industrial Engineering degree from Georgia Institute of Technology, class of '53. After graduating, he served as an engineer with the Radio Corporation of America, Lancaster, Pennsylvania, for a short time. In June 1954 he worked for the New York Naval Shipyard, in the field of safety engineering. He remained with that Shipyard until November 1956 when he accepted the position at the Bureau of Ships.

Edward G. Volz, safety director of Monsanto Chemical Company's John F. Queeny Plant in St. Louis, Mo., has been appointed safety and fire protection engineer for safety section of the company's Personnel Relations Department. Volz will assist in the promotion of an expanded program of service to all Monsanto plants in safety and fire protection program aids and safety and fire standards development.

A native of Overland, Mo., Volz joined Monsanto in 1936. He became safety director for Monsanto's Nitro, W. Va., plant in 1946 and assumed similar responsibilities at the Queeny plant in 1954.

Besides serving as chairman and national representative of the West Virginia Chapter, American Society of Safety Engineers, Volz was a member of the Executive Committee, West Virginia Safety Council and executive chairman of that state's 1952 safety conference. He served also as vice chairman of the Executive Safety Committee of the West Virginia Manufacturer's Association. In 1955 the St. Louis Chapter of the American Society of Safety Engineers elected him to its Executive Committee.

Thomas M. Flanagan of Cranford, N. J., a native of Swissvale, Pa., has been appointed director of personnel of Callery Chemical Company, *E. G. Sanner*, president, has announced. Mr. Flanagan, who received M. A. and Ph. D. degrees at the University of Pittsburgh, will be in charge of all personnel activities at Callery's three plants and administrative headquarters.

Mr. Flanagan at one time was personnel director of the American-Standard Pittsburgh Plant. Later, he became assistant director of employee relations, and was transferred to New York. Before joining Callery, he was a management consultant. He is a member of the American Management Association, the Pittsburgh Personnel Association, the American Society of Safety Engineers, Society for the Advancement of Management and the Knights of Columbus.

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CLIMBING MADE SAFE!

If climber starts to fall, device locks in a notch automatically, instantly. Holds securely. Limits fall to 7 inches.

PREVENTS DEATH AND INJURIES — FROM FALLING

AUTOMATIC, POSITIVE. Will instantly catch and hold workman if he starts to fall, **even if unconscious.** Requires no attention from climber; he climbs in normal manner. Inexpensive. Easy to install; 3 men can clamp it to ordinary ladder in few hours. Clamps to any rung ladder, peg ladder, pole or framework. No welding or cutting. Notched rail hot-dipped galvanized. Entire equipment rust and corrosion proof. Can be kept free of ice by applying heat inside the carrier rail. In use approx. 10 years. Approved by Safety Engineers and Govt. Agencies throughout country. Patented. Manufactured only by

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BURBANK, CALIFORNIA

(Use Key # N-22 on Inquiry Card on page 1)

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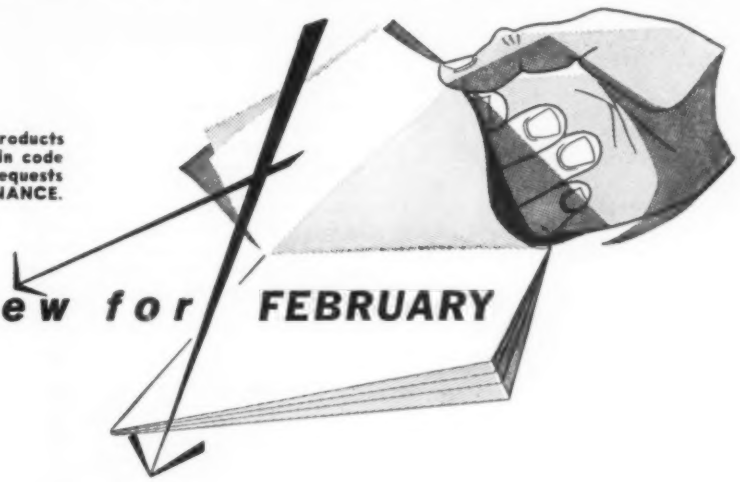


what's new for FEBRUARY

QUICK DELIVERY SLING CHAINS

(Use Key # 675 on Inquiry Card on page 1)

TO overcome long and costly delays in obtaining sling chains as needed the American Chain Division, American Chain & Cable Company, Inc., has developed their new Kuplex Sling Chain that is said to save time and money. Waiting periods for shipments from a supplier and returning of damaged slings for repairs are entirely eliminated. Quick service is available from Distributor's stock.

Kuplex, because of its design, greatly reduces the possibility of catching or snagging on nearby objects. All load-bearing parts remain visible for periodic wear inspections. These new sling chain assemblies are available in single and double leg styles and in six chain sizes from 1/4 inch through 7/8 inch, fabricated from Accoloy 125 material. Each assembly is marked and easily identified as to size of chain with which they are to be used. Component parts are color-marked in orange for easy identification.

Basic components of the Kuplex Sling Chain consist of a shaped master link which is specially designed to retain its shape under loads of up to 18 percent greater than the standard round links, a Kupler assembly consisting of load pin and fluted stainless steel drive pin, any determined length of chain, and a sling hook or grab hook. All components are thoroughly inspected and proof tested at the factory to twice the normal working load limits. In addition, the Kuplers and Kuplex hooks are magnafluxed tested and inspected.

PLASTIC STRETCHER CASE

(Use Key # 676 on Inquiry Card on page 1)

A NEW reinforced plastic stretcher has been developed for the protection of industrial stretchers. The use of reinforced plastics has many advantages over previous materials as it is corrosion resistant and eliminates all maintenance. Further advantages are gained by the new design. Being cylindrical, it has no sharp corners. The case is not affected by moisture and is acidproof. The finish is in gleaming white or conspicuous yellow, with the word "Stretcher" in bright green letters. These letters are permanently cast in place and never need painting as the color is all the way through the plastic. The hardware is of aluminum alloy and is rust-proof. The case has provisions for holding the standard size stretcher and also a blanket. The unit is made by Osborn Mfg. Corp.

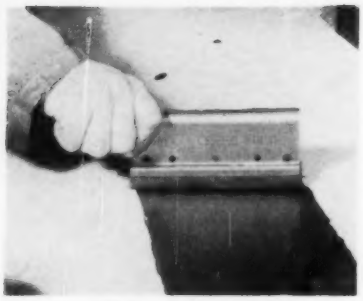
WALL MOUNTED DUNKER

(Use Key # 677 on Inquiry Card on page 1)

STANDARD Industrial Products Co. manufacturers of the well known line of SIPCO Dunking Stations used wherever fire hazards from smoking are a problem, has recently added the new Model 4J to the line. The new model is designed to be permanently mounted on walls, posts, columns, etc. in washroom or other public areas. The model 4J is a logical choice for areas where pilfering is a problem.

Since the canister cannot be lifted off a bracket as is the case with other SIPCO models, the cleaning problem is neatly solved by furnishing a rugged, light-weight moulded glass fiber inner-liner which fits inside the heavy-duty cast aluminum Jumbo canister.

As recommended, the inner-liner is partly filled with water. Drop the "smoke" in the large hole in the canister lid and it's OUT—for good. This method eliminates smouldering, odors and unsanitary conditions. For cleaning, flip back the lid, lift out the inner-liner and dump it. It is available in either the Deluxe bright polished finish or the standard black crinkle finish. The new inner-liner fits all SIPCO Jumbo size canisters and is available as a separate item.



SAFETY WIPERS FOR MACHINE TABLES

(Use Key # 678 on Inquiry Card on page 1)

A LOW COST wiper, especially designed for removing chips and abrasive residue from machine table surfaces, is being produced by the Henlon Corporation. (Patent applied for.) Called "Safety First Table Wiper," the device consists of an easy-to-grasp metal handle which grips a six-inch section of specially fabricated felt material. One sweep of the wiper over a table surface is said to render the area completely clean of all chips, cutting fluids and other foreign matter.

The new cleaning device is believed to be the first such unit specifically designed for cleaning machine tables and shop benches. In many cases today, paint brushes, sticks and rags are used for this purpose, but these methods are time consuming, inefficient and often unsafe. The use of air hoses is definitely dangerous.

Because of its design, the Safety First Wiper can be used to clean chips from beneath drill press spindles or milling machine cutters without exposing the user's hand to danger areas. It is also suitable for chip removal on cutting machines, lathes, drilling machines, broaching machines, milling machines and grinders. It can be used, too, for cleaning a surface plate prior to set up for inspection of precision machine parts.

PLIABLE FRAME WELDERS' GOGGLES

(Use Key # 679 on Inquiry Card on page 1)

"SOFT-I" frame welders' cover goggles, Style 5050, provide new comfort in eye protection, according to the manufacturer, Welsh Mfg. Co. The soft, pliable deep frame molds itself comfortably to the contours of the face and head and fits easily over prescription glasses.

Goggles are available with standard filter lenses which meet every requirement for maximum protection. Heat-treated filter lenses are available on request. Style 5051 for Chippers' is an adaptation of Style 5050.

BLUE STRONGER ASBESTOS

(Use Key # 680 on Inquiry Card on page 1)

NOT dyed as one might expect but mined like white asbestos, comes this stronger asbestos in its natural blue color. This 100% pure asbestos is void of all fillers. It is said to have a higher resistance to fire and heat, to possess greater strength than other fibers and to offer increased resistance to acids, caustics and other corrosives. High tensile and abrasive strength give it longer life. Available for the first time in welding blankets and curtains from Singer Glove Mfg. Co.

WALL DISPENSER FOR SKIN CREAMS & CLEANSERS

(Use Key # 681 on Inquiry Card on page 1)

A NEW wall dispenser for skin protective creams and waterless hand cleaner has been introduced by Milburn Co., makers of Ply protective creams and hand cleaner. The dispenser features a one-piece cast aluminum construction, with the plunger as the only moving part. The plunger measures a controlled quantity per stroke. Breakage and maintenance are minimized by the heavy-duty one piece construction. The plunger is easily removable for cleaning purposes. All lines of Ply creams and Ply waterless hand cleaner are now supplied in disposable 80-ounce units for use with the new dispenser, Milburn Co. announces.

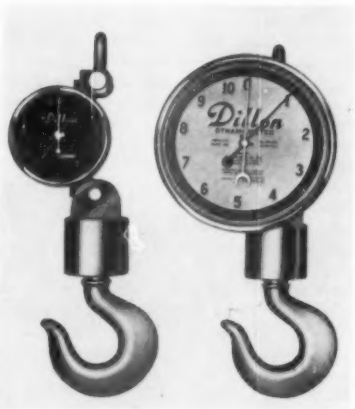
INDUSTRIAL LIFT BRIDGE

(Use Key # 682 on Inquiry Card on page 1)

FOR plants with limited overhead room where a spanning problem exists, a new high-capacity lift bridge which needs no overhead supports has been developed by Gifford-Wood Co. Employing a single linkage arm in what is essentially a cantilevered, double counterweighted system, the bridge will hold up to 17 tons of weight concentrated in a small area. Counterweights and all operating mechanisms are out of the way, beneath the floor, at the point were the bridge pivots.

In the installation shown the bridge spans a railroad siding track well to link the storage area with a shipping dock. The deck of the bridge is covered with ½" checked plate, and it is 9' wide and 20' 11½" long. A single post holds the necessary operating switches.

A unique safety feature to prevent the possibility of damage to the bridge by an object in its downward path are three hydra-tubes running the length of the underside of the bridge. Slightest contact by the hydraulically operated switches with an obstruction under the bridge causes the bridge to stop, reverse itself and start back up. These tubes are automatically energized by the downward movement of the bridge. A vibrating horn and red blinker lights give warning when the bridge is to be operated.

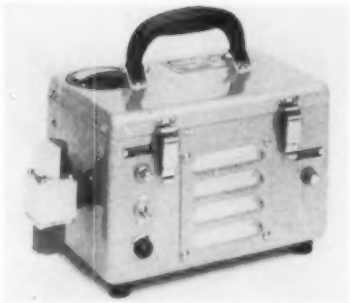


TRACTION-TYPE DYNAMOMETERS

(Use Key # 683 on Inquiry Card on page 1)

DEVELOPMENT of two new traction-type dynamometers has been announced by W. C. Dillon & Co., Inc., manufacturer of scientific testing instruments. The two new instruments have capacity ratings of 0–5,000 pounds and 0–10,000 pounds and are designed for the precision measurement of torque, weight, tension, traction or compression. Each is individually calibrated, certified accurate and unconditionally guaranteed. Unaffected by any extremes in temperature, each unit can sustain accidental overload of up to 25 percent without injury to the calibration.

A red maximum pointer and a set of high tensile clevices are furnished as standard equipment with each model. Both models are available calibrated in either pounds or kilos at no additional charge, feature adjustable zero settings, shatterproof glass dials and are available with either five or ten inch diameter dials.

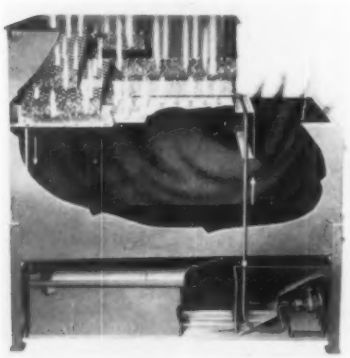


COMBUSTIBLE GAS ALARM

(Use Key # 684 on Inquiry Card on page 1)

A REDESIGNED, portable, audible combustible gas alarm with a new visible indicator meter has been announced by Johnson-Williams, Inc. The "Sentinel" is designed for confined area use and features an externally mounted, plug-in filament unit for rapid response to gases. Typical applications would be (1) welding operations in confined areas that have contained flammable liquids, (2) underground tunnels around streets, (3) excavation projects where gas lines are being laid.

The Sentinel unit is light and easy to handle because the battery charger is a separate unit which does not need to be carried at all times. A remote detector, alarm light for noisy locations, and a sample-drawing attachment are available as optional modifications. With the sample-drawing attachment, a separate portable indicator is not required. The detector unit and sample-drawing attachment have been designed for easy interchangeability.



OIL BATH AIR CLEANER

(Use Key # 685 on Inquiry Card on page 1)

A COMPLETELY redesigned Cycoil oil bath aftercleaner has been introduced by American Air Filter Co., Inc. The new P-17 Cycoil is designed especially for collecting dust particles that might escape conventional dry centrifugals or viscous impingement filters, as in cast iron machining, production metallic grinding, and tool room equipment grinding.

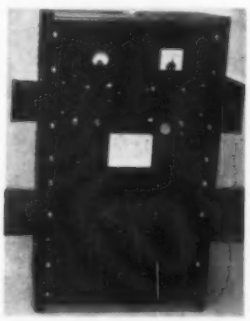
The unit is an automatic, self-cleaning dust collector that separates dust from the air as it passes through a viscous crimped-wire, fluid bed pad. The dust-laden air is mixed with the oil by means of a perforated plate over which the oil flows from a central distributing point. The collected oil droplets drain to the perimeter which is out of the air stream. This washing action keeps the pad clean and the dirty oil flows back to the settling tank where dust particles settle out as a sludge and the oil is recycled. A separate oil reservoir and sludge settling tank permits easier sludge removal even while the Cycoil is in operation. The cleaned air can be recirculated into the workroom.

The P-17 Cycoil occupies a small space, saves installation time, and permits economical relocation of the dust collector with revised plant layouts. It is readily adaptable to old installations of dust control equipment as well as new ones.

ALUMINUM VACUUM CLEANER

(Use Key # 686 on Inquiry Card on page 1)

A COMPLETELY new all-aluminum vacuum cleaner that weighs only 19 pounds has been introduced by the Hild Floor Machine Company for hotels, hospitals, motels, churches and other institutions where compact, easy to carry equipment is desired. Model 404 has a powerful ¾ horsepower by-pass motor, four gallon capacity aluminum tank with nylon filter—for wet or dry pickup without filter change. Market cart type handle and ball bearing cushion casters make it easy to move or carry. Designed for use with 1½" or 1¼" hose and tools.



EMERGENCY LIGHTING SYSTEMS

(Use Key # 687 on Inquiry Card on page 1)

THE "DYNASEAL DY-1019" Emergency Lighting System is completely free of all battery maintenance. It uses hermetically sealed "Dynaseal" batteries which are claimed to never require liquid or service. The 32-volt power supply can be installed wherever convenient and wired to remote light fixtures to provide emergency lighting when power fails. Failure of the regular A.C. power automatically energizes the unit to assure adequate light for public safety. Manufactured by the Dynaseal Lighting Corp., it is completely self-contained with automatic battery charging and circuit monitors. Included are audible and visual alarms to check equipment and operation. Fast recharging after each use restores batteries in 12 hours, then automatically returns to slow charging to preserve batteries.

Both decorative and spotlight fixtures can be used with the "Dynaseal DY-1019" emergency lighting system. This service-free equipment meets the requirements of State and National codes for auxiliary lighting. It is enclosed in a heavy steel case with fused input and output circuits, indicating meters, operating switches, warning signals, and pilot lights.

DRY-CHEMICAL EXTINGUISHER

(Use Key # 688 on Inquiry Card on page 1)

DEVELOPED especially for commercial establishments, this new Protexall dry-chemical fire extinguisher is particularly effective on Class B (flammable liquids) and Class C (electrical machinery) fires, and can also be used on Class A (wood, textile, etc.). Operation of this compact American LaFrance model, which weighs only four pounds, is extremely simple. Operator merely pulls up on carrying handle to break pressure-seal, and depresses operating lever. A penetrating cloud of harmless, non-toxic dry chemical, directed at the base of fire, instantly smothers the blaze.

The Protexall extinguisher, with a UL rating of 2-BC, needs no weather protection, will not freeze at any climatic temperature. Internal pressure is shown on the extinguisher's pressure gauge, and complete instructions for recharging and re-pressurizing are on the cylinder's label. No special tools are required for disassembly and recharge, and it does not require periodic refilling. After use, the powder is as easily cleaned up as spilled flour, using a damp cloth or vacuum cleaner.

The Model PDC-2A is also recommended for vehicle use, and a special clamp-type bracket is available for this purpose. Overall height of the unit is 14½ inches.

NEW GERMICIDE

(Use Key # 689 on Inquiry Card on page 1)

HUNTINGTON Laboratories has announced the availability of a new detergent-germicide called Hi-Sine. It reportedly has wide-range activity and rapidly kills Tubercle Bacilli and Polio Virus as well as other Pathogenic Bacteria.

For added safety, the germicide has a built-in effectiveness signal that is reliable regardless of the water hardness or temperature. Hi-Sine, when freshly diluted, has a rich amber color. As it is consumed through use, the color fades. When the amber color is present, Hi-Sine is being used safely. When the color fades, a fresh solution must be prepared.

The makers say that it is safe on all flooring surfaces. It cleans and disinfects: floors, dishes, thermometers, walls, utensils, instruments, equipment, receptacles, rubber goods, furniture, lavatories and even conductive flooring. Available in one gallon containers, Hi-Sine is extremely concentrated. It is non-toxic and is non-irritating to human beings. Does not sensitize.

NEW CHAIN OILERS

(Use Key # 690 on Inquiry Card on page 1)

FOR automatically applying a film of oil to chains, gears, slides or irregular surfaces, these new oilers can be mounted at any convenient location and oil is released by gravity from the reservoir either manually or electrically to oil applicators. They are made by Trico Fuse Mfg. Co. Precision needle valves on the dispenser, which require no further attention after initial setting, meter just the right amount of oil to applicators. Various manifolds are also available which can be connected in series so that only one dispenser is needed for as many as twelve outlets. For limited or hazardous locations, dispensers can be mounted at a distance from the area to be lubricated, oil being supplied by means of plastic or copper tubing to the manifolds and applicators.

The specially designed applicators, which are not ordinary bristle brushes, withstand temperatures up to 275° F. and can be trimmed to any width to avoid overhang and consequent side dripping. The maker states that they do not spread or become distorted, therefore constant rotating for even wear is unnecessary. The reservoirs and sight fittings have clear Pyrex glass or shatterproof Lucite cylinders so that oil supply is always visible.

NEW BO'S'N'S SWING

(Use Key # 691 on Inquiry Card on page 1)

ROSE Mfg. Company, has announced full scale production of a new, fully adjustable Bo's'n's Swing. Safety advantages of the Bo's'n's Swing include 5,000 pounds tensile strength nylon webbing in the riser and waist straps and 3-inch four-ply cotton webbing body pad. The nylon waist strap has adjustment loops for perfect fit. Comfort features of this new Bo's'n's Swing include an optional hardwood seat that straps onto the belt and cannot fall off. All colors available.

FIRE-RETARDANT VINYL ASBESTOS TILE

(Use Key # 692 on Inquiry Card on page 1)

THE first Fire-Retardant Vinyl Asbestos tile flooring has been produced by Kentile, Inc., according to the company. The new fire-retardant tile has met rigid government specifications, and is suitable for use in factories, retail stores, offices, department stores, hotels, homes, schools, etc.

The new flooring tile is produced in .080 thickness in regular 9" by 9" size. It is manufactured in the several colors with marbleized or mottled designs. The new tile is durable and easy to install and maintain. Regardless of rugged daily wear, it will always retain its luster and beauty, says the manufacturer. Its smooth, non-porous surface resists dirt and grease.

PLIABLE NOSEPIECE GOGGLE

(Use Key # 693 on Inquiry Card on page 1)

WILLSON Products Division, Ray-O-Vac Company, has a new MonoGoggle with a snug-fitting, pliable nosepiece, 100 series. This all-plastic goggle now incorporates extra features for greater comfort, protection, vision and ventilation. The special pliable nosepiece has a flat inner frame edge to assure a snug fit and more comfort. Also, the extra width of the 100 series covers largest spectacles and permits wider, distortion-free vision. In the frame are 410 air slots for better ventilation. Also available in an indirect ventilation style.

HANDY EXTINGUISHER

(Use Key # 694 on Inquiry Card on page 1)

SAFETY First Products Corporation has developed a new three-pound capacity dry chemical fire extinguisher with Underwriters' Laboratories listing and a rating of 4 B:C which it will market under the name "Dri-Power."

Pressurized initially with nitrogen gas at 130 pounds, the extinguisher can be repressurized with nitrogen at any of the company's 1,800 service units across the country, or any other qualified fire extinguisher dealer. It is hydrostatically tested for 800 pounds and has a rupture point of 3,000 pounds. The cylinder is one-piece spun steel meeting I.C.C. standards and all working parts are brass or bronze. The stainless steel pressure gauge is marked for instant check on its operable condition.

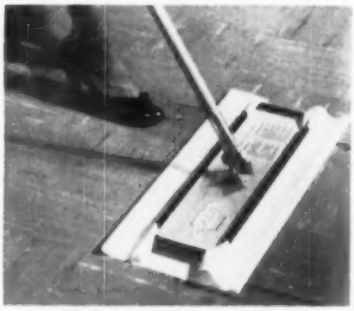
Over-all dimensions are 17½ inches high by 4¾ inches in diameter, weight is approximately 8 lbs. ready for use, and the unit is supplied with either wall or truck bracket.

CLEANING CLOTH & SWEEPER

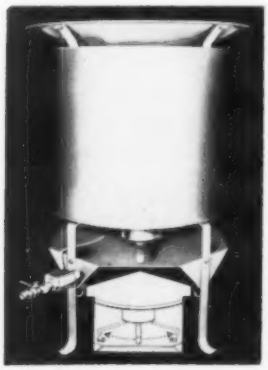
(Use Key # 695 on Inquiry Card on page 1)

LOWNDES Products, Inc., announces two important new industrial cleaning products—disposable KEMI-KLEEN non-woven cleaning cloth and easy-handling sweeper. They are designed to provide increased maintenance efficiency at low cost in buildings, stores, churches, clubs, hotels, hospitals, offices, and institutions.

The cloth, formed of sturdy cotton and rayon fibres completely bonded in a chem-



ical agent and uniformly impregnated with a special emulsion, is used by hand or with sweeper to capture dust and dirt on contact for sanitary, dust-free cleaning. Cloth is treated to the exacting standards of the Franklin Research "Dustchek" formula. The sweeper, designed for most efficient cleaning with the cloth, utilizes its rugged-duty any-angle swivel joint (with position-locking feature) and Polyurethane foam cushion for easy, thorough pick-up of dust, dirt, grit, and grime from floor and overhead surfaces.



POSITIVE CONTROL SALAMANDER

(Use Key # 696 on Inquiry Card on page 1)

FOR THE first time, Weldit, Inc. presents to the Industry a variable input Salamander which uses constant pressure. The simple lever control adjusts from minimum to maximum BTU output at the flick of a finger, thus offering positive heat control for any job. This is a *single burner Salamander*, producing clean, controlled heat at any setting.

The Weldit "Heaterama," Model #1900, features 100% automatic safety shut-off. This feature minimizes fire hazard and permits unattended operation when necessary.

SLURRY ROCK DUST DISTRIBUTOR

(Use Key # 697 on Inquiry Card on page 1)

A MODERN machine for combating the explosion hazard created by coal dust in active work areas of bituminous coal mines is the portable M-S-A Slurry Rock Dust Distributor being marketed by Mine Safety Appliances Company. One batch of slurry—mixed to a capacity of 400 pounds of rock dust to 24 gallons of water—permits satisfactory face dusting of 80 linear feet of mine entry. To assure a balanced blend of thick slurry discharge, the rock dust and water are agitated in the tank by a rotating impeller. The slurry product-mix is then discharged directly through the hose at the rate of 80 to 100 pounds per minute at nozzle pressure of between 10 and 20 pounds, depending on the length of the hose.

A special nozzle allows the operator complete control of the flow of slurry. When the nozzle valve of the hose is turned off while the motor is running, the slurry is recirculated to the tank where the continuous agitation of the mixture prevents separation of rock dust and water. The unit has an explosion tested motor and control for any desired voltage.

COATED WORK GLOVES

(Use Key # 698 on Inquiry Card on page 1)

NORTH PVC-coated industrial gloves, said to be unusually abrasive and chemical resistant and highly flexible, have been introduced in the United States by Jomac Inc. The gloves are manufactured by Jomac-North, Inc., a company recently organized by Jomac Inc. and by James North & Sons Ltd., London, England.

Tests have shown that tough, abrasion-resistant North polyvinyl chloride gloves last from two to five times longer than many types of rubber, leather or coated gloves and save from 50 to 90 percent in replacement costs.

They resist virtually all chemicals and

solvents encountered in industrial use, including acids, alkalis, fats, greases, oils, petroleum products, alcohols and waxes. They have found extensive use in the chemical, drug and food industries, where superior hand protection and ease of cleaning are important. They also are used in many other industries, where hands must be protected from abrasion or from processing-chemicals. They will not crack or peel and are non-flammable and non-oxidizing. The gloves are furnished in a wide variety of styles, including gauntlet, knitted wrist, ribbed surface and either fully coated or palm coated. Available in a full range of men's and women's sizes.

REDESIGNED "ONE-MAN" COT

(Use Key # 699 on Inquiry Card on page 1)

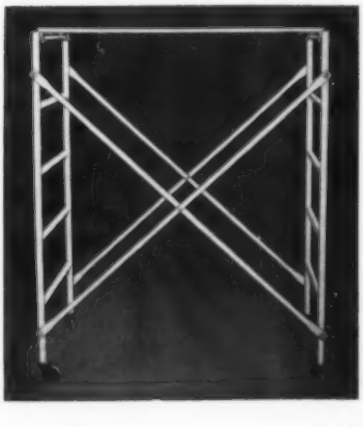
RAYMOND LOEWY Associates of New York and Chicago, internationally-famous industrial design consultants, have made new improvements in Ferno Manufacturing Company's "One Man" ambulance cot. Retained by the company on a continuing basis to redesign certain Ferno products, Loewy restyled the bracing of the cot to provide for more convenient, easier operation.

According to Richard Ferneau, company president, Loewy's additional projects for Ferno concern the development of completely new ideas in the ambulance equipment field.

FOLDING SCAFFOLD UNIT

(Use Key # 700 on Inquiry Card on page 1)

A NEW all-steel light-duty scaffold unit that folds compactly for moving or storage, has been introduced by Bil-Jax, Inc. Called the "Handyman", the unit is 6 feet high (plus caster height) and the plywood platform is 5 feet long. Over-all width is 28 inches. One man can easily set it up in a few minutes, and by removing the braces from one ladder section, the entire unit folds neatly for hauling atop a car or in a station wagon. Platform can be removed from top rung and placed on any rung desired. The 3-inch swivel casters are rubber tired and of the locking type.



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Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work. They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires.
2 Learn the safe way to do a job and do it just that way
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 8½" wide x 8½" deep

...talks the worker's language!

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

Your Imprint Here!

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:

Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

INSIDE PAGES
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So Goes the World
Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Well Fitted Safety Shoes are good for an or all the job can do but many of us never wear anything else.
Dress for Safety
SAFETY SHOES
FALLS
Falls are the second greatest cause of injuries in industry and a source of many severe cases. It is these two-level falls that really do the damage.
You can't be too careful when working with or on ladders—scaffolds—ramps—stairs or any elevation. You are just plain lucky if you don't break bones from bad falls of this kind.
Slippery surfaces, loose objects, defective, rough and uneven floors cause about half of the falls. These falls are bad enough but usually not as serious.
Never clutter up stairs or aisles. Help keep them free of tripping hazards and you may save some one from a bad fall. Maybe yourself.
FALLS KILL 60 EVERY DAY

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

CHOCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

THE "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

VIVID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

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YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below.

Item (1) FIRM NAME. Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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Gentlemen:

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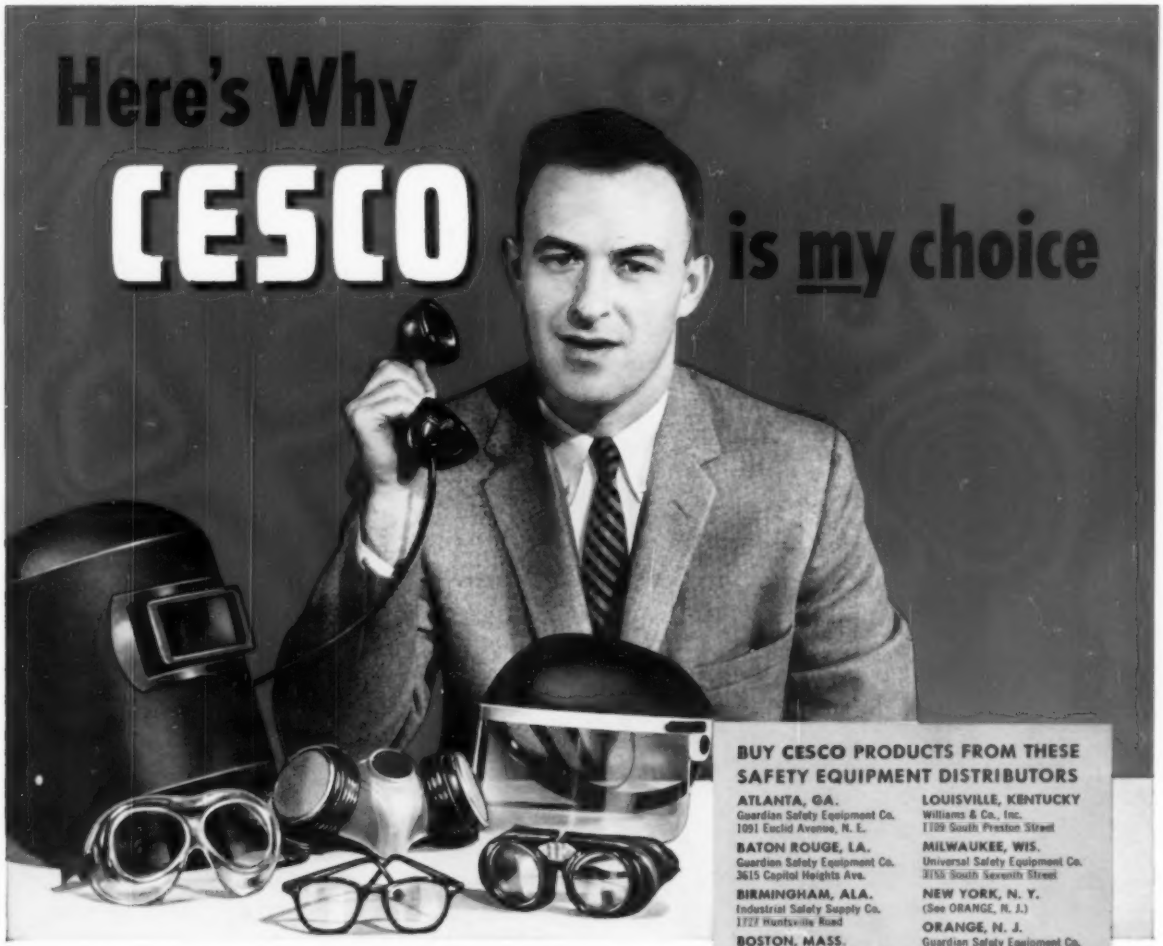
Here's Why CESCO is my choice



There's a CESCO Representative Nearby Ready to Give Me Fast Action On Any Safety Equipment Need

As a safety engineer, I expect two things from my safety equipment source—a complete line of all types of safety equipment and prompt delivery of my order. For years, CESCO has more than met these requirements on both counts. Their distributors are truly safety specialists in every sense of the word, who offer a well-engineered, top quality line of safety glasses, goggles, face shields, welding helmets, respirators, hoods—in fact all of my many safety equipment needs. Equally important, their distributors are located from coast to coast, ready to give expert safety equipment advice. Then, they back up their recommendations with fast delivery of my order. In most cases, I've found the CESCO distributor is able to fill my order from his own stock.

Make a note of the CESCO distributor nearest you and call him next time you have a safety equipment problem

BUY CESCO PRODUCTS FROM THESE SAFETY EQUIPMENT DISTRIBUTORS

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1091 Euclid Avenue, N. E.

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Industrial Safety Supply Co.
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General Equipment Corporation
261 Franklin Street

BUFFALO, N. Y.
The Watson Company
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CHICAGO, ILL.
Universal Safety Equipment Co.
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CINCINNATI, OHIO
Williams & Co., Inc.
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CLEARWATER, FLORIDA
Cor-Mad Equipment Company
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CLEVELAND, OHIO
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3700 Perkins Avenue

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DALLAS, TEXAS
Guardian Safety Equipment Co.
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DETROIT, MICH.
Averill Equipment Company
19225 Conant Avenue

HOUSTON, TEXAS
Guardian Safety Equipment Co.
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KANSAS CITY, MO.
Safety, Incorporated
17½ East 31st Street

KNOXVILLE, TENN.
Safety Equipment Distributing Co.
832 West Main Avenue

LOS ANGELES, CALIF.
Guardian Safety Equipment Co.
7223 South Main Street

LOUISVILLE, KENTUCKY
Williams & Co., Inc.
1709 South Preston Street

MILWAUKEE, WIS.
Universal Safety Equipment Co.
3155 South Seventh Street

NEW YORK, N. Y.
(See ORANGE, N. J.)

ORANGE, N. J.
Guardian Safety Equipment Co.
400 South Jefferson Street
(New York-New Jersey Area)

PEORIA, ILL.
Standard Industrial Products Co.
920 North Garfield Avenue

PHILADELPHIA, PA.
Guardian Safety Equipment Co.
214 South 45th Street

PITTSBURGH, PA.
Williams & Co., Inc.
501 Pennsylvania Avenue

ST. LOUIS, MO.
Safety, Incorporated
2608 Olive Street

ST. PAUL, MINN.
Continental Safety Equipment, Inc.
1551 Selby Avenue

SALT LAKE CITY, UTAH
Universal Safety & Fire Equipment Co., 727 South West Temple

SAN MATEO, CALIF.
Guardian Safety Equipment Co.
220 East Third Avenue

SPOKANE, WASH.
Spokane Safety Appliance Co.
N. 219 Division Street

TOLEDO, OHIO
Williams & Co., Inc.
946 Kane Street

TULSA, OKLA.
Guardian Safety Equipment Co.
1742 South Main Street

MEXICO CITY, D. F.
Safety Equipment, S. A.
Sullivan No. 95

MONTREAL, CANADA
The Butler Optical Company, Ltd.
1520 Mountain Street

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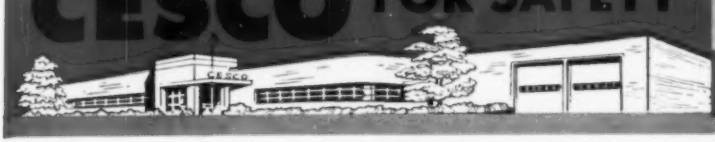

CHICAGO EYE SHIELD COMPANY
2709 West Roscoe Street, Chicago 18, Illinois

(For details, use Key # N-23 on card on page 1)

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first aid for throat irritations

SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS© Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

Twenty-seven years' extensive clinical and lay use has proved the safety and effectiveness of this popular product.

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